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Railway Age

Founded in 1856

BYERS WROUGHT IRON

Chosen for AB Brake Piping

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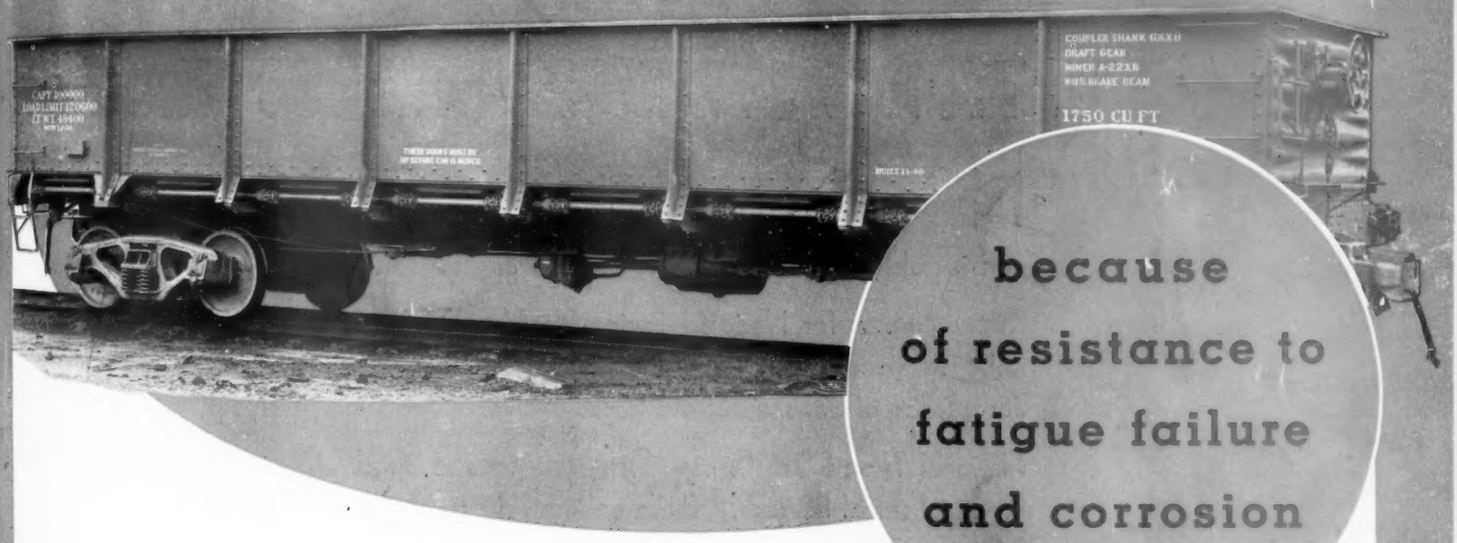

because of resistance to fatigue failure and corrosion

● Many railroads, anticipating 1945 when all freight cars must be equipped with AB brakes, are using Byers Wrought Iron for air lines. This railroad standby offers the necessary properties to permit close radius bends that will retain their shape without strain on the metal.

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Briefly, these facts, backed by experience, are sufficient justification for the use of wrought iron pipe in air brake cross-over lines. Illustrated is one of 500 gondola cars built by the Pressed Steel Car Company on which Byers Wrought Iron is being used.

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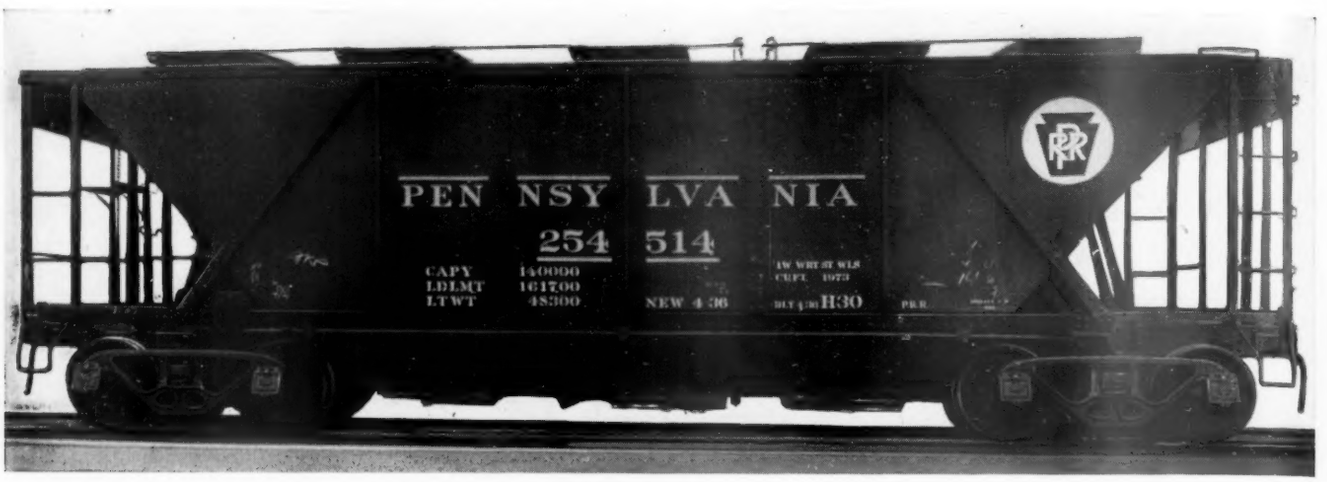

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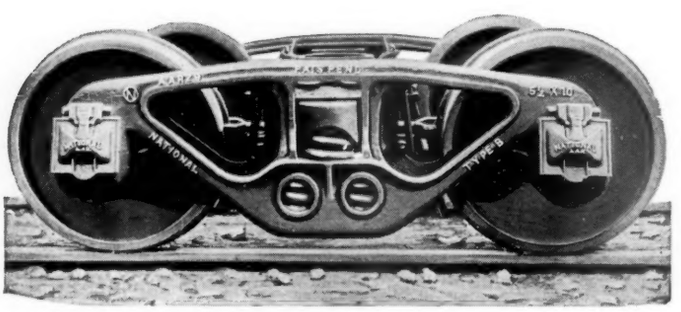

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Railway Age

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"A Hog for Cars"—

—was a statement recently made by a switchman in a classification yard to the General Manager in referring to "Union" Electro-Pneumatic Car Retarders. In this yard, more than 4,000,000 cars have been humped in a five year period, with a big drop in the average cost per car handled. Elimination of congestion through ability to hump continuously, increased capacity of the yard, reduction of engine hours, elimination of switching at other points, and increased safety for both men and equipment, are additional advantages gained as a result of this retarder installation. Similar advantages have been gained wherever "Union" Electro-Pneumatic Car Retarders have been installed. May we estimate the savings to be made from an installation in your classification yards? Consult our nearest office. » » » » »

1218

1881 **Union Switch & Signal Co.** 1937

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RAILWAY AGE

Critical Days for Labor and Management Policies

When historians a decade or more hence are able to look back upon the remarkable period in which we are now living, they will probably be impressed by the extent to which policies by and toward all industry were set first in connection with the railroads—and this no less as regards labor union policies than managerial policies of industry and the attitude of the regulatory authorities. The decisions of the Supreme Court in the Wagner Act cases appear to make applicable to all interstate business virtually the same degree of public regulation which has already been applied to railroads.

As such regulation is extended and intensified in other industries the experience with railroad regulation will, in the normal course of events, be the principal determinant of the form to be given regulation in its extended form. Likewise in the field of labor union policy and legislation it would be strange indeed if the rich and varied experience available in railway labor relationships were not looked to for the answer to the pressing problems of conflict which have arisen in other industries. It would be no exaggeration to say that a historical crisis thus centers around the railroad industry and those who regulate it, those who work for it and those who patronize its services such as has seldom occurred in connection with any private business enterprise.

Opportunity of Railway Management and Labor

The men charged with the duty of managing railway operations successfully thus have the duty and opportunity of pointing the way to successful operation of regulated industry on a large scale. The railway labor unions, if they live up to their historic opportunity, will not only secure for their members a high standard of living and of security without at the same time wrecking the industry upon which their livelihood depends, but they will at the same time show labor in other industries how to accomplish the same result. If railway regulatory authorities and legislators are fully alert, they will realize that a false step now in connection with railway regulation imperils not only the railways, but the industrial life of the nation as a whole. Lastly, but not by any means unimportantly, shippers in their dealings with the railroads must awaken to the inexorable judgment that, as they deal with the railroads today, so tomorrow they themselves will be dealt by.

Of the several groups—railway managements, railway labor, regulatory authorities and shippers—thus cast in roles of such historic importance, the first two appear by their actions to be more fully aware of their responsibilities than do the latter. Certainly never before, in the face of entirely inadequate earnings, has railway management been more keenly alert to its public responsibilities. Never before have managements been more sympathetic with the situation of employees in the ranks. And, as the obverse side of the same relationship, be it said in all fairness that railway labor has lately appeared to have awakened to the fact that, insofar as it is seeking justice and not unduly favored treatment, it can gain more by collective bargaining than by resort to political methods.

Railway Labor and Collective Bargaining

This statement is made with due regard for the facts, first, that the beneficial effects of collective bargaining under the Railway Labor Act are being exaggerated by persons in high places who are holding it up as an example for other industries and their employees, and, second, that by recently going to Congress for 6-hour day, train crew, train limit and other legislation, the railway labor unions have violated the plain spirit, if not the letter, of the Railway Labor Act. No legislation for the settlement of disputes between employers and employees which results merely in peace between them can be said to have entirely fulfilled its purpose. If it results in settlements unfair to either side peace may be purchased at too great a price. If the operation of such legislation is to be beneficial it must result not only in peaceful settlements, but in fair settlements. Furthermore, before collective bargaining under the Railway Labor Act can reasonably be held up as a model for other industries and their employees, it should be used for the settlement of

all controversies regarding wages and working conditions and not merely for the settlement of those which the labor leaders do not prefer to take to Congress.

The position of organized railway labor may be of greater historic importance than that of any other group in American economic life today. If railway labor succeeds in striking a happy mean between securing benefits for its members on the one hand, and being of service to the industry and the public on the other, it will not only gain in members and prestige, but will set a pattern for industrial peace in industries where unions are new. If, on the other hand, it overreaches to the point of bringing ruin upon the industry, is it not obvious that unionization of other industries will be resisted the harder by reason of the bad example? And if wages and working conditions are forced to levels on the railroads which the industry cannot afford, so that its total employment declines, will not unorganized employees in other industries, as a consequence, be less eager for unionization than they would be if the railway unions can show (as has not been shown yet) that a high degree of unionization is compatible with a growing industry with larger opportunities for employment?

Is Railway Labor Growing Less Political?

Happily, recent events tend to show that the railway labor organizations do have a growing sense of the direction in which their own true interest, and that of the railroads and of the nation, lies. By collective bargaining they have secured for their members a most favorable settlement of the pension question—a result which years of political agitation failed to accomplish; and, by so approaching their goal, they have secured the desired benefits by an arrangement which will prove less costly to their employers and to themselves than the political plan they have heretofore supported. Changes in working conditions which up until recently have been sought almost exclusively by legislation are now, it appears, being made the subject of collective bargaining—with the likelihood that the organizations will secure some concessions which they desire, under conditions which will deplete the funds available for wages far less than if the same objectives were sought by the rough and ready methods of politics.

But it is not alone, or even primarily, in these developments, encouraging as they are, that a broader and more socially responsible attitude on the part of the railway unions appears to be emerging. Collective bargaining we have had before; but we have never had before such alertness by the railway unions, or the unions in any industry, toward the securing for that industry of fair treatment by regulatory and legislative authorities. Witness the passage of the Pettengill Bill by the House of Representatives, and the speeches made by some of the congressmen who voted against the measure trying to "square" themselves with railway labor for the way they voted. This measure was, of course, supported not only by the railroads but by powerful shipping interests as well, but no one can suppose that it would have received as favorable a vote as it did had it not been for the friendly offices of the railway labor organizations.

An Example for Other Industries?

In thus giving credit where credit is obviously due, we are not sentimentalists. The labor leaders were not actuated by a sudden flush of altruism and public spirit. Their motives were plainly those of far-seeing and intelligent self-interest. Having satisfied themselves of their ability to get a fair share, and probably then some, of all the money the railroads take in, they finally were wise enough to see that further gains on their part depended on getting more in the kitty, and in realistic fashion—but without overstepping the demands of sound public policy—they have proceeded to do what they can to get more into the common fund from which everyone who makes his living from the railroads has to draw. Call it selfishness if you will, for that is exactly what it is. But it is long-range and far-seeing selfishness, a variety which, if it were to spread throughout all industry and politics, would make us all a lot better off than we now are.

Selfishness able to see farther than the end of its nose is a virtue all-too-seldom seen. Industries far more monopolistic in character than the railroads—and hence, logically, more justifiably subject to government regulation and government competition than the railroads—are among the most ardent supporters of subsidies to railway competitors and ham-stringing regulation of the railways. In such policies these industries are pursuing their immediate self-interest at the expense, as coming events will undoubtedly prove, of their long-run welfare. Not only industrial labor, but industrial management as well, could learn some profitable lessons in enlightened self-interest from the policies of organized railway labor as they have recently been evolving.

A Critical Time for American Institutions

In a time of small business and free competition, business and industry regulate themselves, be they as immediately selfish as they like. But once business gets big, and once it begins to depend upon tariffs and subsidies for its prosperity, then a longer range view of self-interest is imperative. Powers which even remotely resemble monopoly have to be exercised with a view to their effect on prosperity as a whole. Out of the exercise of such power to the detriment of the nation as a whole, or unjustly against any important group—such as customers or employees, for instance—arises the demand for government interference. Thus arose government regulation of railroads, and thus is now evolving government regulation of a wide range of

industry. Such regulation will, at best, be imperfect; quite likely it may be less satisfactory than the situation it seeks to correct. But it will grow commensurate with the inability or unwillingness of industrial policy-makers to consider more than their own immediate self-interest in making decisions which affect persons other than themselves. Union labor, itself, of course, is a parallel form of monopoly power; and its reckless use in some industries is already bringing demands for union regulation.

These are critical times in the history of American institutions, and every group which has anything to do with the railroads is now playing a part which, as later events will show, will prove a determinant of the course which politics and economics henceforth will take. Railway managements and unions have been showing themselves increasingly cognizant of the responsibilities they bear. Our hope is they may ponder their duties and their opportunities yet more deeply, spread the insight they have achieved among other groups which they touch, and thus do their part to save this country from the kind of disintegration to which narrow particularism has led on the continent of Europe.

Freight Car Loading

WASHINGTON, D. C.

REVENUE freight car loading for the week ended April 17, totaled 751,328 cars, an increase of 35,284 cars or 4.9 per cent above the preceding week, an increase of 109,050 cars or 17 per cent above the corresponding week in 1936 and an increase of 140,187 cars or 22.9 per cent above the corresponding week in 1935. All commodity classifications except grain and coke showed increases over the preceding week, and all commodity classifications except grain showed increases over last year. The summary, as compiled by the Car Service Division, Association of American Railroads, follows:

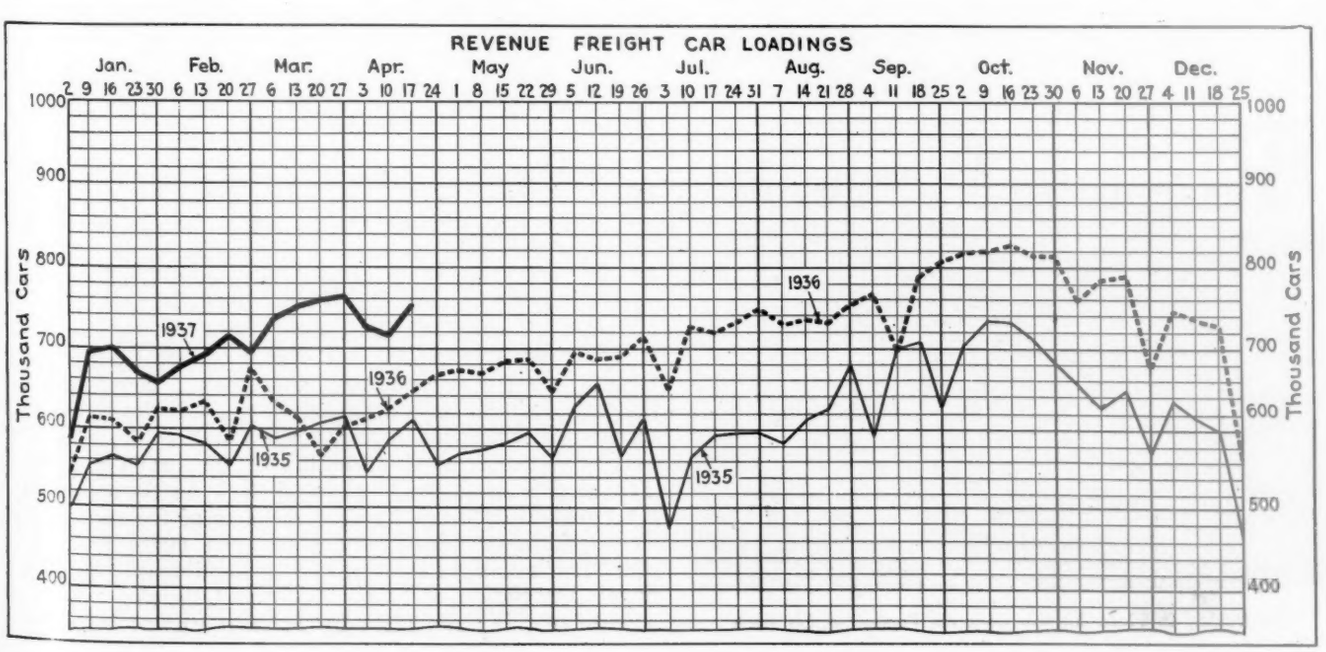
Revenue Freight Car Loading
For Week Ended Saturday, April 17

Districts	1937	1936	1935
Eastern	172,692	148,875	143,741
Allegheny	159,059	132,232	118,011
Pocahontas	50,897	45,082	42,719
Southern	109,110	95,618	91,151
Northwestern	99,912	73,880	75,819
Central Western	102,924	93,060	88,736
Southwestern	56,734	53,531	50,964
Total Western Districts	259,570	220,471	215,519
Total All Roads	751,328	642,278	611,141
Commodities			
Grain and Grain Products	29,583	30,180	29,426
Live Stock	13,075	12,972	12,500
Coal	119,482	109,800	115,341
Coke	10,580	6,827	6,431
Forest Products	36,532	31,537	26,267
Ore	35,918	9,569	11,829
Merchandise L.C.L.	173,188	161,603	159,815
Miscellaneous	332,970	279,790	249,532
April 17	751,328	642,278	611,141
April 10	716,044	621,843	586,568
April 3	726,687	613,581	545,456
March 27	761,109	594,789	616,520
March 20	759,269	568,851	607,178
Cumulative Total, 16 Weeks	11,292,698	9,779,539	9,248,083

Car Loading in Canada

According to the summary of the Dominion Bureau of Statistics, car loadings in Canada for the week ended April 17 totaled 46,865, as against 47,344 for the previous week and 40,235 for the corresponding week last year (the Good Friday holiday falling in this week last year).

	Total Cars Loaded	Total Cars Rec'd from Connections
Total for Canada:		
April 17, 1937	46,865	31,207
April 10, 1937	47,344	28,461
April 3, 1937	50,104	29,174
April 11, 1936	40,235	24,411
Cumulative Totals for Canada:		
April 17, 1937	704,854	424,622
April 11, 1936	628,838	345,231
April 13, 1935	642,878	343,050



Left — Portion of the Completed Deck. Below — The Composite Deck Is Carried on a Pile Trestle Substructure.

Laminated creosoted planks were employed in viaduct over Louisville & Nashville near Montgomery, Ala.

Devise Novel Composite Deck for Highway Overcrossing

A COMPOSITE concrete-wood floor, in which the wood portion consists of laminated creosoted planks, has been incorporated in the grade separation structure that carries what is known as Old Birmingham highway over five tracks of the Louisville & Nashville near Montgomery, Ala. Among the distinctive features of the design are the use of "shear-developers" and "uplift spikes" to insure that the composite slabs of concrete and wood will function as a unit, and the offsetting of the laminations vertically to provide a ribbed or grooved top surface into which the concrete slab is effectively keyed.

Reinforcing in Place for the Concrete Portion of the Deck

The Structure

This structure, which is more than 500 ft. long, embraces a reinforced concrete viaduct, with 46-ft. spans over the tracks and pile trestle approaches at each end. The east approach consists of 17 panels, while the one on the west end has 3 panels, all panels being 19 ft. 10½ in. center to center of bents. The east approach is on a grade that raises the level of the roadway about 11 ft. in 15 panels, and for a distance of 190 ft. this approach is on a five-degree curve. As a consequence, the deck of the east approach had to be constructed to provide for curve superelevation and grade, as well as the vertical curve at the top of the grade and the transition from the superelevated deck on the curve to the crowned deck on the tangent parts of the structure. The roadway is 24 ft. wide between curbs and the structure is designed for the H-15 loading of the National Association of State Highway Officials.

Most of this adjustment in elevation was provided by

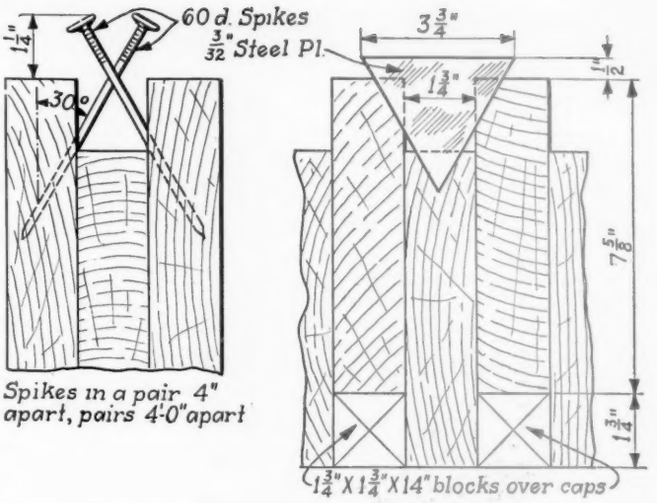
varying the cut-off elevation of the piles in the bents. These consisted for the most part of four creosoted piles with 12-in. by 12-in. caps and 4-in. by 8-in. sway braces. The caps are spliced near the centers of the bents, and the bents are tower-braced in every third panel.

Deck on Pile Trestle Approaches

The deck on the pile trestle approaches is made up of a reinforced concrete slab averaging about 4½ in. in thickness, on top of a wood slab consisting of 2-in. by 8-in. planks set on edge and spiked together with 30-d spikes. Every alternate plank is raised 1¾ in. higher than the intermediate ones, these higher planks being supported over the caps on short 1¾-in. by 1¾-in. blocks. Thus, the top of the plank slab had a series of parallel longitudinal grooves 1¾ in. deep that provided a dovetail and mortise bond for the superimposed concrete slab. However, as this bond is effective only against lateral displacement, resistance against longitudinal shear (to insure composite flexural action) was provided in the form of "shear developers." These consisted of triangular steel plates of $\frac{3}{32}$-in. material, 3¾ in. by 3½ in. in size, that were driven vertically into the grooves to engage both the raised and lowered laminations, but extending ½ in. above the tops of the raised laminations. The spacing of these shear developers was varied from 10 to 23 in., depending upon the magnitude of the shear to be resisted.

A third form of bond, namely that required to resist any tendency for the wood and concrete slabs to separate in the vertical direction, was provided by means of 50-d "uplift spikes." These were driven in pairs into the lower edges of the grooves at an angle of 30 deg. from the vertical, but with the heads protruding 1¼ in. above the top of the wood slab. The spikes of each pair were staggered from 4 to 8 in. longitudinally and the pairs of spikes were spaced 4 ft. center to center. In addition to providing resistance to vertical separation, these spikes also supplement the shear developers in resisting horizontal shear.

Except in the end spans, the planks were 20 ft. long, spliced alternately at the quarter points and over the supports, thus insuring continuity of the planks in the middle half of the spans, the region of maximum positive bending moment and, therefore, of greatest tensile stress in the lower or wood portion of the composite slabs. It was necessary, of course, to provide 15-ft. and 5-ft. planks in the panels at the ends of the trestles and in the panels adjacent to the temperature joints in the slabs, which were introduced at intervals of 80 ft. At



Illustrating Application of the "Shear Developers" and "Uplift Spikes"

these points, the ends of the slabs were separated by a transverse slot 1½ in. wide extending through both the concrete and the wood.

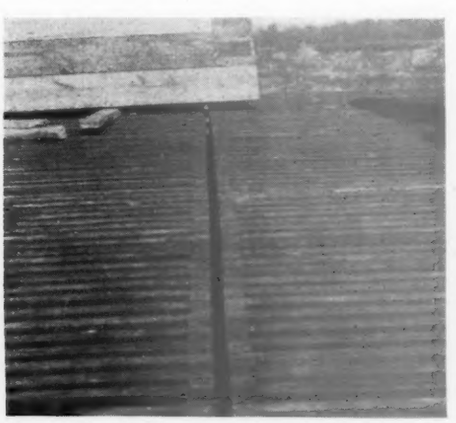
The concrete portion of the slab was reinforced for negative bending moment over the bents and, in addition, was provided with temperature reinforcement, consisting of ½-in. bars, spaced 12 in. center to center transversely and 9 in. center to center longitudinally. Where the floor slab is canted for curvature, the concrete has a uniform thickness of 4½ in., but on the tangent part of the viaduct the concrete surface is crowned by making it 5 in. thick along the center line and 3½ in. thick at the curb line.

All piles and timber were pressure-treated with Grade One creosote in accordance with American Wood-Preservers Association standards. Piles, bulkhead plank and bracing were treated with 16 lb. and the remainder of the lumber with 12 lb. of creosote per cubic foot.

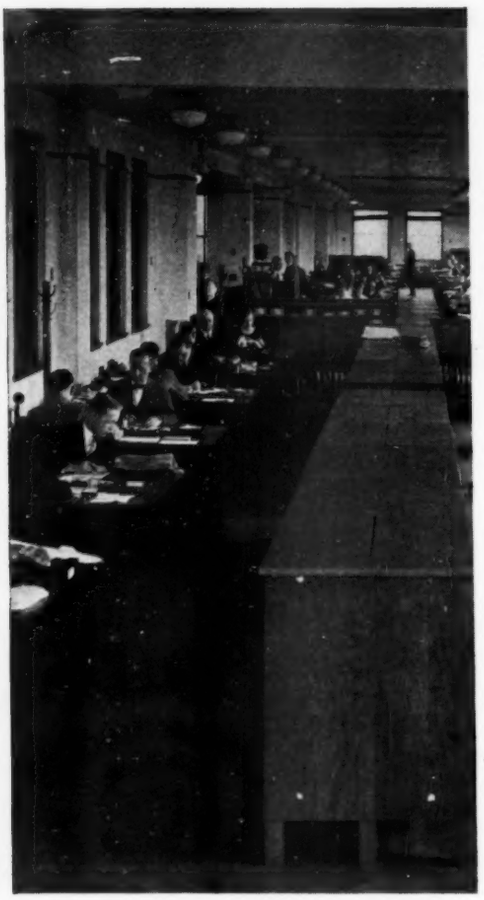
The bridge was designed by J. P. Trotter, bridge engineer of the Alabama State Highway department, the idea of the composite deck having been developed by the service bureau of the American Wood-Preservers' Association as the result of a study of various types of composite beam designs that embraced a series of tests that were conducted at George Washington university. The following claims are made for the composite design selected:

1. The beams can be made of any desired width to

(*Continued on page 757*)



Left — Timber Base of the Concrete Deck Slab Showing the "Shear Developers" and "Uplift Spikes." Right — Expansion Joints, 1½ in. Wide, Were Introduced at 80 ft. Intervals and Extend Through Both the Concrete and Wood



In the Central Stores Office of the Pennsylvania

New York Railroad Club Discusses Supply Work

Principles of sound stores management and sensible purchasing aired in meeting of buyers and sellers

THE New York Railroad Club presented a purchases and stores program on April 16, with C. D. Young, vice-president in charge of purchases and stores, Pennsylvania, opening the program. R. C. Harris, general storekeeper, Pennsylvania, presented a paper on railway storekeeping and economies, F. S. Austin, assistant purchasing agent, New York Central, outlined needs and improvements in railway buying policies and G. O. Beale, chief purchasing officer, Chesapeake & Ohio, commented on the relation of buyer and seller. C. E. Smith, vice-president in charge of purchases and stores, N. Y. N. H. & H., was also scheduled to discuss the experiences of railroads with salesmen of supply companies, but was prevented by illness from participating. Better management of stores by intelligent study of statistical barometers of commercial and railway business and the necessity of fair dealing in purchasing were chief topics, and the rules and practices by which these objectives can be furthered were considered. The papers of Mr. Harris and Mr. Austin were, in part, as follows:

Railway Storekeeping Economics

By R. C. Harris*

While the general policy governing a supply department is fixed by the executive in charge, no stores officer can interpret that policy intelligently unless he is familiar with and understands the trends of business. Several questions are constantly before him: Are we in a rising market, and, if so, are we protected far enough ahead? Are we in a declining market, and, if so, how closely can we cut orders? What will the maintenance policy be during the next three or four months? Can we get deliveries if we postpone ordering until later?

Reading the Sign Posts

There are many sign posts to give the proper direction to his activities if he will take time to read them. There is first, information, preferably in chart form, showing the trend of the composite index of business. The value of this chart lies in the indication it gives indirectly of impending changes in delivery periods. The rising trend which we are now experiencing suggests that orders are being placed on the manufacturers in volume and that there will be a decided lengthening of the delivery periods. It is a warning to every stores officer that orders must originate further in advance of the need for material. It also indicates that prices are not likely to decline within the near future and there is no danger that orders placed in advance of need may be placed later at lower prices.

There is second, the report of car loadings of individual roads and of all Class I roads. These reports are published weekly. When an upward trend in car loadings continues, it is obvious that more cars are in use and that maintenance of equipment materials will be used in increasing quantities. Consequently, new material must be ordered on that basis. This information is most valuable because it is the earliest data of its kind published. A chart maintained currently, showing this information as soon as published, is well worth the

* General Storekeeper, Pennsylvania, Philadelphia, Pa.

time spent on it. There is, third, the report of gross and net earnings of railroads published monthly, which gives a later but more definite indication of the policy which will probably govern the management in fixing its monthly maintenance programs, of which material is an important part. The dotted line at the top of chart "A" is an index indicating the trend of industry, the chief producer of transportation east of the Mississippi river. This index reached its peak in 1929. It is safe to assume that the percentage of this tonnage which must be transported is about constant from year to year. The upper solid line shows the gross earnings of the railways, which were higher in 1926 than in 1929. The depression actually began in 1926 for the railways, largely because from 1926 to 1929 the competition of highway traffic was making heavy inroads on railway earnings. Then came the long depression, during which both railway and highway traffic suffered equally until 1932. From 1932, the industrial index has risen sharply, but notice how slowly railway earnings rose from 1932 to 1935. Industry was producing the tonnage, but the railways were failing to obtain their share. We were encouraged by reported increases in gross earnings from year to year and failed to realize that the position of the railways in the transportation industry was slipping.

The bright spot on the chart is that of railway gross earnings in 1936. In that year, the increase in earnings practically paralleled that of industry. To what extent the earnings of 1937 will bring a gain in that position remains to be seen. The prospects are encouraging. The results in 1936 show that the railways have proved their ability to recover from a losing streak.

Purchases and Earnings

The lower solid line on the chart shows the value of railroad purchases of materials and supplies. It shows that purchases follow the trends of gross earnings with surprising fidelity. If then, earnings can be predicted, railway purchases can be predicted. It shows that management retrenches in purchases in proportion to the decline in gross earnings, and not in accordance with the trends of industrial production. While the industrial index was rising from 1926 to 1929, the railways were restricting their purchases long before the storm of October, 1929, broke generally.

Chart "B" shows, for Class I railways, that the value of unapplied materials on hand at the end of each year has dropped from a high of $551,694,794 in 1926 to $279,971,400 in 1935. This line represents the investment necessary to serve operations and new work, and shows a gratifying recession. There is no way to obtain a comparative index of service which should accompany this chart, but experience shows that the service has not declined during that period. The lower line shows operating expenses, made up of labor and material, the latter supplied from the stock of materials on hand. The decline in the investment in materials was somewhat more rapid than that in gross earnings. There are two reasons for this: one being closer co-operation between the user of material and the supply department, the other being a better organization for procurement and distribution.

The long decline in the line on the last chart, showing investment in unapplied materials, is accelerated by a change in the psychology of manufacturers. In times of depression, they seem willing and anxious to make up standard material in advance of orders, holding it until the need arises. That attitude encourages the buyer to wait until the last moment in ordering his requirements and is an important factor in lowering the railways' investment in unapplied material. As soon as a depression is over and orders move in a normal way, the firms immediately reverse their practice and manufacture only as orders are received. At the moment, we all know that orders are far ahead of deliveries. This means that railways must carry a higher protection against long or erratic deliveries, with a resulting increase in the investment in unapplied material.

Storekeeping Problems

The work of storekeeping is visualized by the conditions at a busy engine terminal. There are rows of bins containing probably 10,000 items of material. Stockmen are passing from the counter to the bins or from skid boxes to the bins, filling orders for material, as clerks in a hardware store do when waiting on customers. The material may be for a locomotive undergoing heavy running repairs or it may be for one scheduled out within an hour. In any case, the responsibility is to fill the orders. The stockmen are not interested at the moment

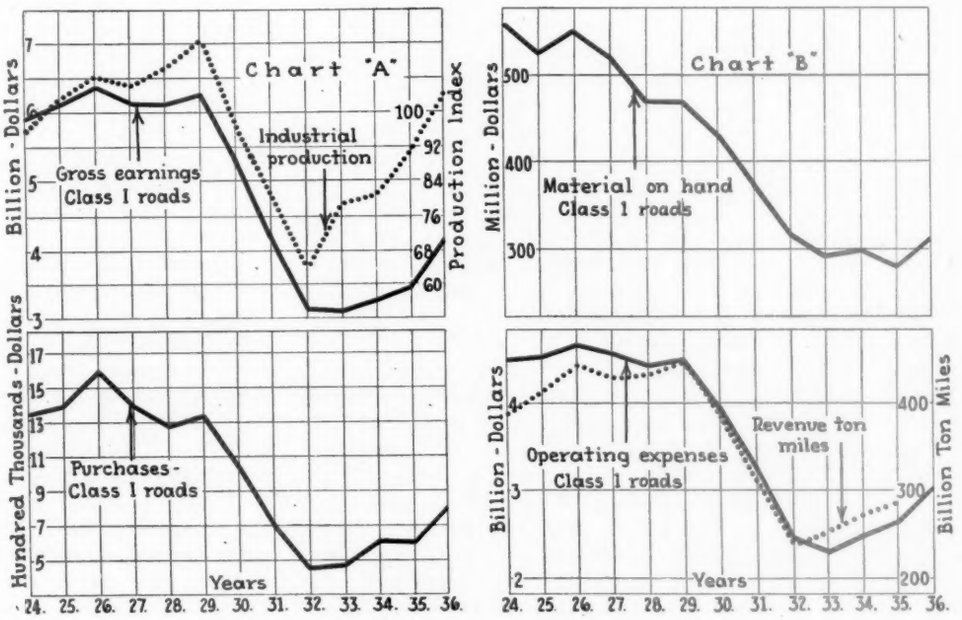


Chart A.—Showing Trends of Industrial Production, Railway Earnings and Purchases of Supplies

Chart B.—Showing Trends of Material Balances and Operating Expenses

in the way the depleted stock may be replenished. They are on the firing line and must use the ammunition at hand effectively. Any failure on their part means a loss.

The interesting part of storekeeping, however, is the manner in which this stock is replenished at the proper time with material ordered from manufacturers. It is in this operation that the time element is most important. Obviously, on a railroad using from 75,000 to 100,000 different items of material, a systematic method of ordering must be devised that will operate automatically. The material is divided into classes and those classes are handled each month by the same men. In that way, each man becomes intimately acquainted with the history and use of the material he handles.

To obtain the benefit of volume purchases, the ordering of commodities on most railways is scheduled throughout the month, all castings being ordered one day; rubber goods, packing and hose another day; lumber a third day, and so on throughout the month. With a knowledge of the period required by the manufacturer for delivery, and knowledge of the volume of each kind of material used by the railroad in a specified period, properly weighted by the data indicated by the current "information post," it is practicable to place orders so that the material will arrive at approximately the time desired.

On every large railroad, an official description of each standard article must be prepared which will be understood alike by the manufacturer and the railroad. In years past, we have had the same article described in different districts as "joint bars," "angle bars," "splice bars," and "fish plates." There is little wonder that the manufacturer found it necessary to ask what we really wanted. Normal progress in engineering design and practice creates a constant stream of additional items or changes in descriptions of materials. To take immediate advantage of those changes, descriptions should be changed as soon as plans are approved, so that manufacturers will have the latest plan and specification reference. On the Pennsylvania, this is accomplished by cutting an addressograph plate which provides the proper terminology on a permanent record. An order loosely describing the material wanted is a prolific source of misunderstanding and unnecessary correspondence.

Obsolescence

Materials and practices, when standardized over long periods, are subject to the danger of obsolescence. It is, therefore, obvious that materials handled in routine purchases, month after month, should be examined periodically to be certain that the quality is satisfactory for the service, and that the service justifies the price. This examination might show that the material is of much higher quality and price than the service requires. For example, lumber, previously surfaced on two sides, might now be acceptable if surfaced on one side. The quality of an item may also have been improved by a manufacturer in such a way that it can be offered as a substitute for material of a higher price, or the quantity used may suggest an improvement in the quality. It is understood that such changes should be approved by the using department before being made; but the changes can be and frequently are suggested by the supply department because of its intimate knowledge of railroad and manufacturing practice.

To an enginehouse foreman, it probably appears unpardonable to run low in the stock of any item of material, but that opinion is not always the correct one. Suppose we increase the margin of protection 10 per cent and a stock of 10 drills is increased to 11 drills. That small increase alone, if carried through all items of purchased and manufactured material, would add over $25,000,000 to the investment in unapplied material on Class I railroads.

Harmonizing Demands

The supply department is an intermediary between the manufacturers of material and the user. The user paints the picture of his needs to the stores department. The manufacturer paints the picture of his ability and capacity to the purchasing department. Those two pictures must be made to harmonize before the railroad can get the products which best fit the need at a price justified by the service. That result cannot be accomplished unless the employees of the supply department have a working knowledge of the functions of the other departments of the railroad. It has been wisely said that a supply department officer of mediocre ability, who understands fully the relationship of the supply department to other departments of the railroad, is more valuable to his company than a brilliant officer who does not understand that relationship.

The manufacturer makes certain rules to govern procurement practices, which must be observed by the buyers if penalties are to be avoided. These rules are in no sense arbitrary. They have come into existence as a result of long experience and are designed to penalize the buyer who orders in small quantities or in odd sizes, which increases the expense to manufacturers. Steel products, for example, such as bars, plates, shapes, pipe, etc., carry an extra of 10 cents per 100 lb. for quantities less than a carload. In addition, bars carry an extra for quantities less than 6,000 lb.

In most cases, the average buyer would be unaware of or indifferent to the extra costs incurred by the manufacturer in producing such orders. The buyer can, however, avoid most of these penalties by proper planning. That may require ordering for periods longer than normal, or it may require establishing one point on the railroad as a place to receive the total quantity ordered, from which reshipments will be made to substores as needed.

Cutting Distribution Costs

The chief effort of most roads, generally, is to eliminate rehandling costs by shipping direct from the manufacturer to the point of ultimate use. A western road purchasing its material in the east could have a general store at the eastern terminus of the railroad from which the entire road might be served without back haul of its material; but the New York Central or the Pennsylvania, which purchase most of their materials at points along the lines of their roads, would have much cross-hauling if one storehouse only were established on each road.

One of the cardinal principles of the stores department is to write orders so as to give the purchasing department the widest possible latitude in obtaining competitive prices, because the determination of prices, sources of supply and terms of purchase are prerogatives of the purchasing department. Quality, time of delivery and quantity belong to the stores department. Mutual respect for and recognition of these responsibilities are imperative for the best interest of the railroad.

A supply department, to be successful, must build up in the mind of the user a confidence that when an emergency arises, it will be met. When that confidence is lacking, the user constantly feels the necessity for obtaining enough material to protect himself against the

severest demand. A recognition of that degree for every user would be an unbearable burden for any railroad. The supply department, through its centralized control, provides a balanced supply which will meet any contingency at minimum expense.

Comments on Railway Purchasing

By F. S. Austin*

In any discussion of railway purchasing and the relations between the buyer, the seller and the consumer of material, it should be recognized that a purchasing department must, first of all establish a reputation for fair dealing, as confidence is the foundation of all business transactions. This fair dealing must apply not only to the seller, but also to the user and the storekeeper. The seller must have confidence that there will be no unfair claims or cancellations, and that his bills will be paid when due. The user must have confidence that any material substituted in place of that requisitioned will be satisfactory; and the storekeeper must be able to feel that the firm given the order will deliver the material at the required time.

The purchasing executive should also be easy to approach, should give the seller such of his time as is necessary to state his case, and should always be courteous. I hope that that day has passed when a salesman finds it necessary to walk around the block getting up courage to make his call on the purchasing agent. The type of purchasing agent which inspired such feelings has, I believe, become extinct.

The seller should be thoroughly familiar with the material he sells; his home office should keep him up-to-date relative to the changes in his material, and advise him of orders received from the buyers whom he contacts. There are times when it is necessary for the sellers to shift their men, in the same way that purchasing men are shifted from certain commodities to others, but this should be held to a minimum. It is disconcerting to both the buyer and the seller to be constantly explaining past performances to new men.

The best friend the buyer has is the old law of supply and demand. Commodity prices which are moving in strict line with supply and demand conditions are the correct prices for those commodities. When material prices are artificially controlled, the purchasing executive is at a loss to know what is to happen to prices. Producers are naturally interested in getting as high a price for their commodities as possible, but where artificially controlled, commodity prices tend to hold up long after declines have occurred in uncontrolled commodities. The facts regarding each commodity should be used as a buying guide. Buyers have enjoyed a buyer's market for a long period, but it now appears that we are in for a seller's market. If this is so, I hope that the sellers will appreciate some of the nice things the buyers did for them during the buyer's market.

Another good friend of the purchasing department is the specification. However, specifications without tests are useless. Factors which enter into the preparation of a specification are the service required, the source of supply and the cost. In each of these, the user, the manufacturer and the buyer are interested parties and should be consulted.

Trade associations have been of great assistance to all buyers by setting up specifications covering their particular commodities, making it simpler for the buyer to make his purchases from any one of a great number of manufacturers and feel assured that what he receives will be satisfactory. Examples of such associations are the Portland Cement Association and the Southern Pine Association. In addition, the Association of American Railroads, the Division of Simplified Practice of the United States Department of Commerce, and Special Committee No. 2, American Society of Mechanical Engineers have done a great deal toward making buying conditions easier.

It is not material purchased to specification which troubles the purchasing department, as manufacturers are well-informed relative to specifications and the railroad inspectors assume the burden of getting what is wanted. It is the miscellaneous materials, on which there are no specifications, which take the most time. Such commodities are usually bought by trade name, after having gone through a period of actual test. Comparable products from three or four concerns are arranged for so that, through competition, a fair price will be obtained for the article. I have seen prices drop from 50 to 60 per cent under such competition. The purchasing department is the servant of the using departments, just as truly as those departments are the servants of the sales department. If there were no sales, there would be no necessity for the existence of other departments.

With this in mind, the purchasing department should place orders with as little delay as possible after the receipt of requisitions. Again, it is the non-standard or specification items which take the time. Many times requisitions for such items specify a definite manufacturer's product and are marked "rush." The using department has, in many cases, spent weeks determining what it wants, but expects the purchasing department, with the meager information shown on the requisition, to purchase this material, without competition, within a few days after the receipt of the requisition. This is unfair not only to the purchasing department but also to the trade, which should have an opportunity to offer competitive bids.

It seems to be inherent in human nature for everyone to think he is a good buyer, and there are times when purchases are not made known to the purchasing department. This condition is reduced as purchasing departments improve.

* Assistant Purchasing Agent, New York Central.

Aklo Heat-Absorbing Glass

WITH increasing attention being paid to the adequate insulation of modern railway passenger equipment, designers look critically on the large amount of window space which constitutes about one-third of the entire side and end wall area of a car. A comparatively new development, adapted to afford substantial assistance in solving the problem of heat transmission through windows, is a heat-absorbing glass, known as Aklo and made by the Libby-Owens-Ford Glass Company, Toledo, Ohio.

Aklo is a plate glass of special chemical composition that gives the glass the ability to absorb infra-red light rays. It has a special coefficient of expansion, transmits a high amount of visible light and has a slightly greenish cast. Ordinary plate glass is said to transmit 92 per cent of visible light, whereas Aklo transmits only 78

per cent, thus reducing glare and eye strain, a result which is augmented by the slight greenish tint.

More important, however, is the fact that Aklo plate glass absorbs infra-red rays. In sunlight, the infra-red rays are heat rays and include one-half of the heat from the sun. Thus, Aklo absorbs approximately one-half of the heat of the sun's rays. When a ray of sunlight passes through glass, 5 per cent of the heat is reflected by the surface of the glass, 48 per cent is absorbed by the pane of Aklo, and the remainder, equaling only 47 per cent of the original sun's heat, is transmitted directly through the Aklo glass. These percentages are clearly indicated in the illustration which shows a ray of sunlight transmitted through a double glazing of Aklo and ordinary glass. When the ray of sunlight has passed through the outside pane of Aklo, it carries only 47 per cent of the sun's original heat, and as it passes through the pane of ordinary glass on the inside, 5 per cent of the heat is again reflected, resulting in only 42 per cent

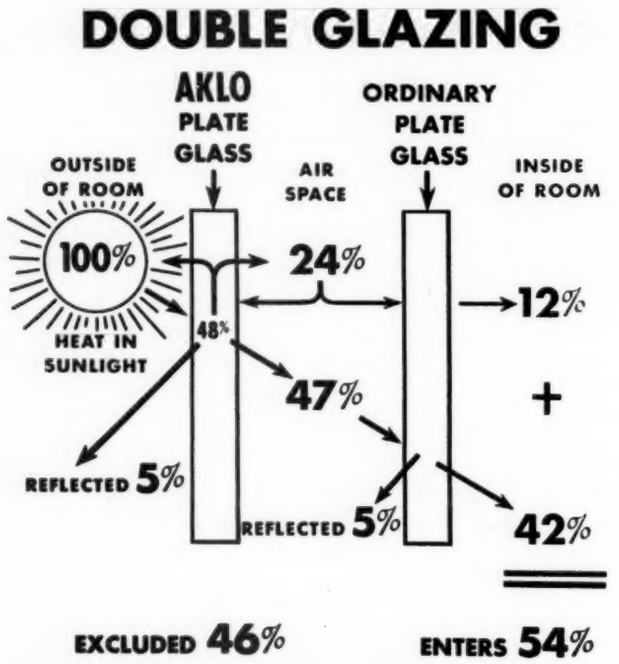


Diagram Showing Reduced Transmission of the Sun's Heat Through a Double-Glazed Window, Comprising One Pane of Aklo Plate Glass and One Pane of Ordinary Plate Glass

of the heat in the original sun's rays falling directly on the passengers or interior of the car.

This promises to answer in a large measure the problem of insulating passengers from the uncomfortable direct summer sun rays, since tests have indicated an actual reduction of 10 to 15 deg. F. in temperature inside a double glazing of Aklo and ordinary glass, as compared to conventional double glazing.

If the railway car is air conditioned, this glazing system will also have an economic effect in reducing the car's air-conditioning costs. By reference to the diagram, it will be seen that of the 24 per cent of the sun's heat which is conducted toward the inside of the single pane of Aklo glass, that amount of heat only will be conducted into the air space in the recommended double glazing. This 24 per cent will then be again conducted half inside and half outside, or 12 per cent of the sun's heat will enter the car through conduction. Thus, the Aklo double glazing will allow a total of only 54 per cent of the sun's heat to enter the car, and thereby favorably affect air-conditioning costs.

Tests conducted at the University of California are said to have shown that, under maximum summer sun rays in that locality, ordinary glass transmitted 325 B.t.u. per sq. ft. per hr. Under the same conditions, it was found that Aklo glass transmitted only 195 B.t.u. per sq. ft. per hr., thus indicating how air-conditioning costs will be reduced and passenger comfort increased by the use of Aklo heat-absorbing plate glass. The use of this glass also tends to reduce the formation of condensation in double-glazed windows.

Rail Production in 1936 at Five-Year High

TOTALING 1,219,846 gross tons, rail production in the United States in 1936 was greater than for any year since 1931 when it was 1,873,233 tons, according to figures compiled by the American Iron & Steel Institute. Rail production last year exceeded the output in 1935 by 508,309 tons, or 71.4 per cent; in 1934 by 209,622 tons, or 21 per cent; in 1933 by 803,550 tons, or 193 per cent; and in 1932 by 817,280 tons, or 203 per cent.

Increases in the production by weight groups in 1936 as compared with 1935 showed considerable variation and in one weight group the tonnage produced showed a substantial decline. The weight group showing the largest increase was that comprising rails weighing 120 lb. and less than 136 lb., the increase being from 154,367 tons to 368,470 tons, or 139 per cent. In the "100 and less than 120-lb." group the increase was from 340,800 tons to 611,527 tons, or 79.5 per cent; while production in the "85 and less than 100-lb. group" increased from 85,627 tons to 99,961 tons or only 16.7 per cent. Somewhat surprising is the fact that production of rails in the "136 lb. and over" group, after showing a substantial increase in 1935 as compared with 1934, decreased from 58,858 tons in 1935 to 22,680 tons in 1936, or 61.4 per cent.

As usual practically all of the rails rolled in 1936 were of open-hearth steel, the tonnage in this classification amounting to 1,185,176 or 97.16 per cent of the total production. The production of rails from Bessemer and electric steel continued relatively insignificant, amounting only to 289 tons as compared with 565 tons in 1935. In addition to these classifications the total tonnage of rails produced in 1936 included 34,381 tons rolled from old rails, 41,383 tons of girder and high tee rails and 448 tons of alloy steel rails.

Production of Rails by Weight Per Yard

Years	Under 50 pounds	50 and less than 85 pounds	85 and less than 100 pounds	100 and less than 120 pounds	120 and less than 136 pounds	136 pounds and over	Total
1920	489,043	433,333	952,622		729,118		2,604,116
1921	211,568	214,936	902,748		849,566		2,178,818
1922	265,541	274,731	728,604		902,900		2,171,776
1923	272,794	300,907	864,965		1,465,850		2,904,516
1924	191,046	213,274	853,431		1,175,581		2,433,332
1925	163,607	219,648	765,371		1,636,631		2,785,257
1926	197,260	256,287	797,662		1,966,440		3,217,649
1927	161,836	173,257	539,445	1,314,424	617,524		2,806,486
1928	134,197	125,726	465,393	1,203,749	718,428		2,647,493
1929	141,362	102,944	409,628	1,233,599	834,605		2,722,138
1930	95,626	81,299	267,879	835,496	592,933		1,873,233
1931	50,089	25,524	123,398	495,752	462,988		1,157,751
1932	16,655	13,705	28,593	215,091	128,522		402,566
1933	*49,116	†15,413	40,973	154,007	156,787		416,296
1934	*70,085	†17,111	73,639	491,642	325,942	31,805	1,010,224
1935	*57,127	†14,758	85,627	340,800	154,367	58,858	711,537
1936	*96,111	†21,907	99,961	611,527	368,470	22,680	1,219,846

* 60 pounds or less per yard.
† Over 60 and less than 85 pounds per yard.

Forwarder Probe in New York

Analyses of Acme set-up and rail earnings on forwarder traffic feature final sessions*

NEW YORK hearings of the Interstate Commerce Commission's investigation of freight forwarding operations (transportation of consolidated carload freight, I.C.C. Docket 27365) re-opened in the Pennsylvania Hotel on April 26 before Commissioner C. R. Porter and Examiners R. N. Trezise and C. A. Rice. The three-day sessions covered, in the main, further analysis of the relationship between forwarding companies and various rail carriers whose facilities they utilize and, in particular, the organization, services, and rates of the Acme Fast Freight, Inc. W. J. Walsh attended as counsel for the I.C.C.

Appearing as first witness, R. B. Sturm, special agent of the I.C.C. Bureau of Inquiry, testified as to securities operations of the Linden Securities Corporation subsequent to his analysis of its organization in the October 13-23 hearings in New York, as reported in the *Railway Age* of October 17, 1936. He revealed that the Linden Securities Corporation recently sold on the open market 15,000 shares of United States Freight Company stock at $31.50 per share, continuing to hold 146,000 shares in the company, which owns the entire capital stock of the Universal Carloading & Distributing Company. The current market price of the stock is $23.50 per share. His testimony revealed that there has been "no change whatsoever" in the obligations of the Linden Securities Corporation to the Securities Corporation of the New York Central, amounting to $14,943,248.40, for which the Securities Corporation has the option to purchase stock of the United States Freight Company. He also presented exhibits of the freight charges paid to railroads by the Universal Carloading & Distributing Company during 1936 and a profit and loss account of the company for the 12 months ending December 31, 1936.

N.Y.C. Earns More on Forwarder Than L.c.l. Business

The succeeding witness in the Universal case, H. W. Bassett, transportation engineer of the New York Central, presented a statistical analysis purporting to prove that the Central earns more on freight charges paid to it by the forwarding company than on its own l.c.l. business over identical routes between similar points. Quoting sample figures on various runs local to the railroad, compiled for a three-day test period during February, 1937, the witness stated that the net earnings per ton-mile for Universal cars were 1.86 cents, compared with 1.35 cents for Central l.c.l. cars, and earnings per car mile of 23.41 cents for Universal cars contrasted with 8.41 cents for l.c.l. cars. He quoted 645 miles as the average haul for forwarder cars and 507 miles for l.c.l. cars, and submitted 12.6 tons as the average load for Universal cars and 6.2 tons for the l.c.l. cars. These averages Mr. Bassett compiled from a total of 126 Universal and 130 l.c.l. cars in movement.

The witness then offered as evidence supporting his argument compilations of earnings, expenses, tonnage, and mileage of two New York Central expedited merchandise trains running overnight between New York and Buffalo, consisting of refrigerator and baggage equipment for passenger service, operated by crews on freight wages. Taking all operating "out-of-pocket" expenses into account he found that from July 12 to 18, New York Central l.c.l. cars on these two trains averaged a net after expenses of $13.60 per car, while consolidated shipment cars of the Empire, Universal and R. & K. forwarding companies on the same trains averaged $62.02, $70.80, and $69.90 respectively. Additional statistics for net earnings per car-mile, per ton, per ton-mile, and per train-mile followed, revealing, in general, higher net profits for forwarder cars than for railroad l.c.l. cars. Mr. Bassett added that a current comparison would have to take into account pick-up and delivery expenses for l.c.l. shipments.

In summary of l.c.l. versus Universal figures, the witness declared that the average load per car is one-third greater for forwarder cars and average earnings three times greater. He admitted that his company "would be fortunate to get more than out-of-pocket costs on l.c.l. haulage." Mr. Walsh, in cross-examining the witness, brought out that no account had been taken in the exhibits presented of the classification of freight in l.c.l. cars and added that the earnings from these cars reflected the class of traffic carried. He could not, however, lead Mr. Bassett to admit that this consideration was necessary in a comparison of l.c.l. and forwarder cars.

Questioned as to the desirability of transferring all railroad l.c.l. service to forwarders, Mr. Bassett replied: "I would like to see the forwarders handle all our l.c.l.," adding that this statement was based on the standpoint of New York Central earnings. In answer to the query as to the light loading of l.c.l. cars, he replied that the business offered the railroad forced such loadings, admitting that forwarder movements are generally between key centers while l.c.l. shipments often necessitate branch and pick-up movements.

Analysis of Acme Fast Freight, Inc.

Explanation of the organization, services, and carrier relations of the Acme Fast Freight, Inc., furnished the theme of W. J. McEntee, vice-president of the company, who took the witness stand for J. R. Turney, counsel appearing for Acme. His testimony revealed additional information to that presented by Mr. Sturm and Mr. Walsh in previous hearings, reported briefly in the *Railway Age* of October 17, 1936, on page 562. Pointing out that the forwarding company is wholly owned by T. A. Bradley, having no connection with any railroad, Mr. McEntee traced its history from inception as a local drayage agent in New York to its present set-up of six major subsidiaries, operating throughout the United States. Defining their status, he declared that "Acme companies are common carriers of freight and express matter by highway, rail and water." Asked how Acme conducts its operations, Mr. McEntee replied that it does so in general "by employing the instrumentalities, facilities and services of other carriers under contractual or

* See *Railway Age* for October 17, 24, and 31, of 1936.

traffic arrangements," adding that it owns some transportation equipment and one subsidiary truck line. In answer to inquiry relating to Acme's connection with the railroads, the witness replied: "Railway transportation is procured by Acme at regular tariff rates and the fictional relation is that Acme is a shipper. The economic relation is the same as an agency through which a distinct carrier obligation of the railroad company is discharged." In later testimony, he declared that, in his opinion, forwarding companies should be granted the legal status of common carriers and that rate agreements should be effected with other carriers as between carriers and not on the shipper-carrier basis.

Analyzing Acme's operations, Mr. McEntee explained that the company divides the country into territories surrounding key stations, or concentration points, to which goods from originating points are shipped by truck or l.c.l. rail and there made up in car-load lots. Questioned as to choice of carrier by Acme, the witness declared that while the great bulk, probably 95 per cent, moves by rail either wholly or in part, the selection of transit agency varies even from hour to hour, depending upon availability and schedules in service. It is such flexible co-ordination, made possible by highly organized central supervision that constitutes the chief advantage of forwarder's service, he claimed. Referring to his company's use of railway station space for loading and checking, Mr. McEntee pointed out that the railway facilities are not indispensable and that other properties are available at similar or lower rental costs. Acme uses the railway facilities, he claimed, at the carriers' own request, explained by the railway's desire for close proximity between its own and the forwarder's checking facilities, the effort to preserve the forwarder's shipments for its own lines, and the argument that switching costs at freight houses are lower than those distributed among individual private sidings. Rentals for these facilities, the witness testified, are based primarily upon evaluation for commercial use at current market prices which is determined by the railroad company. In evidence he offered an exhibit comparing rentals paid to railways with those quoted for similar facilities by non-railroad owners, revealing that 85 per cent of the facilities rented from railroads could be obtained at the same or lower cost elsewhere. He added further that terminal costs, especially for checking, incurred by the railroads on forwarder shipments, are generally less than those for carload shipments of ordinary character because: 1. Forwarder freight is marked ready for drayage. 2. It is trucked in larger loads. 3. It is rarely stored. 4. It is loaded more heavily in car-load lots.

Quizzed at intervals as to various special dispensations granted to forwarding companies by the rail carriers, such as "flying trapeze cars," hold-over privileges, grants of baggage cars at freight-car rates, "split-car" privileges, etc., the witness replied in each case that his company profited in no way from these so-called privileges and that they were wholly on the responsibility of the railroads involved.

Acme Desires Regulation

Dealing with rebate and special privilege grants by the forwarders to shippers, Mr. McEntee, speaking specifically for Acme and generally for all forwarding companies (he served on a rate committee of the forwarders in 1933), testified that since the NRA codes were put into effect in 1933, no rebates have been given. Upon examination by Mr. Walsh as to other extra-tariff practices, he admitted that "as is the case with any commercial enterprise," abuses have cropped up, comprising, in general, the grant of lower rates to large-volume shippers who, lacking this privilege, would ordinarily ship directly in car load lots.

Concerning regulation of forwarding companies, Mr. McEntee stated that they have been regulated by the I.C.C. under the Motor Carrier Act since its inception, but was unable to determine their present status under the act, except to point out that they are, in the main, interstate carriers. He added: "Acme takes the position that all forwarding companies and all forwarding operations, including those by rail, water, and express, as well as by motor vehicles, are subject to regulation under the Motor Carrier Act to the same degree as common carrier truck operators are regulated by that act." He also referred to a bill to this effect now pending before the Interstate Commerce committee of the House of Representatives (introduced by Congressman Gerhardt). The key to the problem of forwarder operation, Mr. McEntee stated, is recognition of the forwarder as a transportation agency rather than a shipper. A "businesslike" relationship between direct carrier and forwarder should comprise: 1. Regulation of forwarders on same basis as that of motor carriers. 2. Elimination of "foolish" classification and tariff provisions affecting forwarder traffic. 3. Compensation to carrier for forwarder traffic upon "simple contract basis." This basis, he suggested, should be similar to that which the Commission has fixed for the compensation of railroads in the transportation of mail; i.e., in general "upon a car-foot-mile formula, with due regard to stand-by requirements," but not at identical rates, since mail travels on passenger trains at greater expense.

At an earlier period in the hearings, further testimony was presented by T. L. Haden, special investigator for the I.C.C., in connection with alleged abuses in relations between the Southern Pacific and the Universal Carloading & Distributing Corporation. Following this, S. W. Osborne, a manufacturer of cut shoe soles at Boston, Mass., and Mt. Jewett, Pa., testified that the Acme Fast Freight, Inc., had refused to accept shipments from those originating points to various stipulated destinations, on the plea that such movements were not profitable and produced a letter from Acme in support of his testimony.

As first witness in the Wednesday morning session, J. J. Bunkworth, assistant superintendent of the New York Central at Buffalo, N. Y., testified that his road found it necessary for efficient switching and train make-up to fulfill set-back orders presented by Universal in handling their shipments at the Louisiana street freight station, Buffalo, N. Y. Following him on the stand, A. E. Lloyd, superintendent of the New York Central at Chicago, presented an exhibit purporting to demonstrate similar factors in force at the Clark street freight station, Chicago.

Statistics on Comparative Earnings and Costs

Returning to direct analysis of forwarder operations, B. T. Elmore, a statistical analyst formerly employed by the I.C.C. Bureau of Statistics on cost surveys, testified (for Acme) that the railroads lost, from 1925 to 1936, 24 million tons of l.c.l. traffic, or seven times the total tonnage handled by the three main forwarding companies in 1936. After submitting exhibits explaining the basis of his allocation of railroad costs (claimed to be in conformity to I.C.C. cost segregation formulas), the witness offered in evidence a comparison of revenues and costs of rail freight traffic on all Class I and terminal roads in 1935 for each of 29 classes of carload traffic, l.c.l. traffic, and forwarder traffic. He concluded that

the latter enjoyed the highest ratio of revenue to cost of any other class, or 141 per cent, compared with 92 per cent for all traffic and 44 per cent for railroad l.c.l. traffic. He also submitted exhibits comparing rail revenues from forwarder shipments with that from express matter, pointing out that the latter was carried at an out-of-pocket loss of 30 million dollars. In cross-examination of the witness, Mr. Walsh brought out that in the statistics submitted, the revenues from forwarder traffic had been computed for a 12-month period on the basis of November as a typical month. The witness also admitted that no account had been taken of additional expenses incurred by the rail carriers in handling forwarder shipments nor of differences in costs of high and low speed hauls. Mr. Walsh further received admission that a portion of the cost computations was based on general evaluations of judgment and not on specific findings.

The last witness, E. M. Dillhoefer, executive vice-president of the National Carloading Company, testified that his company is a co-ordinating agency and claimed that revenues paid to carriers by his firm per car totaled three times the average earnings of the rail l.c.l. cars. This testimony closed the freight forwarder hearings. Council will file briefs by June 30, 1937, and the examiner will submit a proposed report to the Commission.

Freight Car Maintenance Organized*

Rehabilitation program must be based on a financial analysis to determine what repairs are economical

By K. F. Nystrom

Superintendent Car Department, Chicago, Milwaukee, St. Paul & Pacific, Milwaukee, Wis.

THE maintenance of freight cars does not begin in the transportation yard or on the repair track, but with a comprehensive understanding of car supply and demand. It ends at a dismantling plant where equipment is disposed of as scrap. In other words, intelligent car maintenance requires extensive experience and a wide enough perspective to visualize a car before it is designed and until it is worn out, when the remnants are loaded for the scrap market.

A competent man experienced in car matters should be the one charged with the responsibility of designing a freight car so that known weaknesses can be eliminated. This is a vulnerable spot today on many railroads where design is usually handled in a department which seldom comes in contact with the operation, as usually a car foreman is considered too far down in the rank and file to be consulted.

After a satisfactory design has been accomplished and agreed upon, then the question arises, Should the present ownership of old cars be rebuilt, or will it pay to purchase new equipment? In the latter case, a systematic retirement program must be carried out so that mechanical wear and obsolescence will follow a natural and systematic trend. This is not an easy problem, as what is economical under one condition may be unsound under another. A financial study, is therefore necessary to determine just what policy should be followed. For instance, if a certain freight car could have been purchased for $2,000 in 1934, this same car may cost $3,000 in 1938; under those conditions it is necessary to go into finances deeper than ordinary in order to establish guide points of maximum expenditure to perpetuate a car for a given period. After this is established, a thorough survey of the existing equipment must be made and the actual cost determined of a heavy general repair or rebuilding program. By having these two facts, how much a new car would cost, and how much it would cost to give general heavy repairs or rebuild an old car after the estimated extended life has been ascertained, a financial analysis will establish whether or not such schedule repairs are economical.

Table I shows the cost of owning and operating freight cars per dollar of investment, from which it is possible to ascertain the maximum expenditure, say after 25 years life, to condition the car for another period of service, as against the cost of owning, operating, and repairing a new car. This table reflects not only financial and theoretical facts but also experience as to the cost of maintenance and schedule repairs, which must be considered together with the physical characteristics of the car, inherent weaknesses, and obsolescence. Table I is based upon increments of one hundred cents of investment depreciated over a period of 25 years assuming a five per cent interest on investment and 25-year sinking fund with interest at five per cent compounded annually.

The annual maintenance and the general repairs is based upon a fairly accurate record of hopper cars. However, further experience and actual data may prove that the total cost of carrying charges and maintenance will be a direct function or constant per dollar of investment for all freight cars, but until a definite trend has been established, actual records of cost of maintenance and general repairs should be applied for each class of car.

Let us consider the typical question; How much money can be economically spent on a car 25 years old to extend

* Abstract of a paper presented before the April 12 meeting of the Car Foremen's Association of Chicago.

the life another four years in place of purchasing a new car? It is shown that it cost 34.36 cents to carry and maintain a new car for four years per dollar of investment, and 19.01 cents could be spent in general repairs

Table I—Cost of Freight-Car Operation per Dollar of Original Investment in Present Markets

(All Figures are Cents)

		Carrying Charges				Repairs				
Year	Value	5 Per cent interest	5 Per cent sinking fund	Total	Total accum.	Annual	General	Total	Total accum.	Grand total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(6 & 10)
1	100.00	5.00	1.99	6.99	6.99	.65		.65	.65	7.64
2	97.91	4.89	1.99	6.88	13.87	.74		.74	1.39	15.26
3	95.72	4.78	1.99	6.77	20.64	1.02		1.02	2.41	23.05
4	93.42	4.64	1.99	6.63	27.27	.60	4.08	4.68	7.09	34.36
5	91.00	4.55	1.99	6.54	33.81	1.38		1.38	8.47	42.28
6	88.46	4.42	1.99	6.41	40.22	1.48		1.48	9.95	50.17
7	85.79	4.29	1.99	6.28	46.30	1.62		1.62	11.57	58.07
8	82.99	4.15	1.99	6.14	52.64	.88	7.88	8.76	20.33	72.97
9	80.05	4.00	1.99	5.99	58.63	1.90		1.90	22.23	80.86
10	77.06	3.85	1.99	5.84	64.47	1.99		1.99	24.22	88.69
11	73.82	3.69	1.99	5.68	70.15	2.13		2.13	26.35	96.50
12	70.42	3.52	1.99	5.51	75.66	2.36		2.36	28.71	104.37
13	66.85	3.34	1.99	5.33	80.99	1.20	36.80	38.00	66.71	147.70
14	63.10	3.15	1.99	5.14	86.13	2.50		2.50	69.21	155.34
15	59.17	2.96	1.99	4.95	91.08	2.86		2.86	72.07	163.15
16	55.04	2.75	1.99	4.74	95.82	1.52	6.30	7.82	79.89	175.71
17	50.70	2.54	1.99	4.53	100.35	3.16		3.16	83.05	183.40
18	46.15	2.31	1.99	4.30	104.65	3.24		3.24	86.29	190.94
19	41.37	2.07	1.99	4.06	108.71	3.37		3.37	89.66	198.37
20	36.35	1.82	1.99	3.81	112.52	1.78	9.25	11.03	100.69	213.21
21	31.08	1.55	1.99	3.54	116.06	3.60		3.60	104.29	220.35
22	25.54	1.28	1.99	3.27	119.33	3.80		3.80	108.09	227.42
23	19.73	.99	1.99	2.98	122.31	3.90		3.90	111.99	234.30
24	13.63	.68	1.99	2.67	124.98	4.00		4.00	115.99	240.97
25	7.23	.36	1.99	2.35	127.33	4.10		4.10	120.09	247.42
26	5.00	.25		.25	127.58	2.05	19.01	21.06	141.15	268.73
27	5.00	.25		.25	127.83	4.10		4.10	145.25	273.08
28	5.00	.25		.25	128.08	4.10		4.10	149.35	277.43
29	5.00	.25		.25	128.33	4.10		4.10	153.45	281.78

to extend the life for another four years. Assume that a hopper car can be purchased for $2,000, then 19.01 cents times $2,000 equals $380.20 which could be spent as a maximum if it were certain that four or more years or service could be attained.

Schedule Repair Program for Freight Cars

After having the above foundation, and as mentioned, having made a thorough survey of the existing equipment, definite plans can be given for the maintenance of freight cars. Railroads more and more realize the importance of having a definite car repair program. For many years, passenger cars have been maintained and given general repairs periodically. In regard to freight-car repairs, some railroads have started successfully with a six-year program, others with a four-year program. The Milwaukee ten years ago started with a four-year cycle of schedule repairs. This four-year cycle was not arrived at in a haphazard way, but was decided upon only after a study was made of the life of paint, trucks with all component parts, and the general condition of the car, and ten year's experience has proved that it is desirable and is economically sound.

After starting this program it had to be greatly curtailed during the depression. However, at no time was it entirely abandoned with the result that we have gone through the depression with an average bad-order percentage of less than three per cent.

The average cost of giving freight-train cars cycle or schedule repairs, including cabooses, together with the number of cars repaired each year is shown in Table II.

It will be noted that during the depression period the number of cars given schedule repairs together with the average cost per car was reduced. The reason for the latter is that we gave preference to our best cars which were due for schedule repairs. Thereby, we kept a higher standard of maintenance of freight cars than otherwise would have been possible under the very trying conditions. Anyone who would check up the Milwaukee total ownership of freight cars would find that at no time have one-fourth of the cars received schedule repairs in any one year. The reason for this is that new cars not due for schedule repairs and cars subject for retirement were deducted. Obviously, the annual new car program and a retirement policy must be determined if an economical and systematic repair program is to be established. As it is necessary to predetermine a schedule repair program at least four years ahead, it follows that the cost of material must be predetermined and the amount of labor, preferably expressed in man-hours, known. This is not difficult because an accurate determination of schedule repair costs should be available after such a program has been in operation for a few months if shop orders are issued for such work. An added benefit of a predetermined schedule repair program is that an accurate estimate can be submitted to the management for annual car-department expenditures.

In establishing a repair program, each series of cars should be carefully studied and recommendations obtained from the men in the field, and preferably the matter should be further discussed and agreed upon at a general meeting where all principal car foremen are in attendance and where they would feel free to discuss, agree and disagree on what is proposed. This is the policy pursued on the Milwaukee and found very helpful.

Shop Facilities Necessary

To carry out a successful and economical schedule repair program, it is obvious that proper repair facilities must be made available. In this respect the car department, on most railroads, has not been given the consideration it deserves. There are today large railroads which do not have a semblance of modern freight-car repair shops; some are still making freight car repairs out in the open. A modern repair shop will increase the efficiency of labor at least 20 per cent and also establish a considerable saving in the conservation of material and small tools.

Table II—Variation in Cost of Freight-Car Repairs Over a Nine-Year Period

Year	Number of cars given schedule repairs	Average cost per car
1928	14,406	$176
1929	15,600	199
1930	12,877	181
1931	8,257	134
1932	4,738	125
1933	5,175	101
1934	6,471	111
1935	8,053	111
1936	10,686	132

I believe that at the present time, if a survey was made of locomotive shops which some railroads have abandoned, it would be found that these could, at comparatively small cost, be converted into suitable freight-car repair shops.

The location of repair shops is of great importance. They should be located where the density of traffic is the greatest and where there is a prevailing empty car movement. Some yars ago, the idea prevailed that repair shops should be scattered over the railroad, but that is not necessary. As a matter of fact, with the exception of some ore cars and flat cars assigned on certain divisions, the Milwaukee could give schedule

repairs to all of its cars in Chicago terminals and I believe this railroad is spread out over greater territory than any other except the Canadian roads. It is better to have one suitable shop with proper tools than several shops without facilities.

After a schedule repair program is established, an annual work program for freight train cars will prove economical. With annual work it is understood that certain periodical repairs are concentrated at a few larger repair points where cars are available and where there are proper facilities. When selecting these repair points, it is important the repair tracks be open at both ends and located conveniently to the transportation yard so that cars can be switched at a minimum cost. On the Milwaukee there are ten such annual work repair points and we know we have established considerable economies.

Only emergency work such as inoperative brakes, hot boxes, defective draft gears or questionable light weights is done at other repair points, except where cars are operating locally.

In order to bring about the aim of having one date cover all annual work, the following instructions are in effect on the Milwaukee:

Cars receiving schedule repairs.—On cars receiving schedule repairs, all annual work must be performed regardless of last previous stencilled date.

Cars due for annual work.—Cars on which the last air brake cleaning date is at least twelve months old or those on which the last journal-box packing date is at least fourteen months old, should be considered due for annual work and all annual work must be performed.

Cars not due for schedule repairs or annual work.—When air brakes become inoperative before twelve months from stencilled date and therefore are cleaned and restencilled, the draft gears must be inspected and restencilled regardless of last previous date, and journal boxes must be repacked if last previous date is more than six months.

Air brake work.—Work to be done strictly in accordance with A.A.R. Rules.

Improper sized rods and levers are to be removed and replaced with those standard to the car so as to maintain the proper braking ratio. Brake beams, hangers, pins and brackets should be carefully inspected and where the limits of wear, etc. are reached as defined in A.A.R. Rule 63, necessary repairs or renewals be made. Cotter keys and flat keys must be renewed if old keys are worn and loose. The brake hanger pin having slot for flat keys, when requiring renewal, will be replaced with pin having $\frac{7}{16}$-in. drilled hole for $\frac{3}{8}$-in. cotter key. The $\frac{3}{8}$-in. cotter key must be used in cases except where pins have slot for flat key. All keys must be spread so that same will be tight and prevent wear due to vibration.

Repacking of journal boxes.—Work to be handled strictly in accordance with A.A.R. Rule 66.

Draft gear inspection.—When inspecting Cardwell draft gears, one nut should be removed and the rod pulled out so as to make it possible to thoroughly inspect the inside of the gear. Loose or broken coupler-pocket rivets and cracked and excessively worn coupler pockets should be looked after and necessary repairs made. Particular attention should be given to the back filler in riveted yokes and if found to be loose, the draft gear should be dropped as we find a large number of these fillers missing. In no case should we permit the riveting of the filler in the yoke unless the hole is properly countersunk. Coupler keps having the old hairpin cotter should be removed, new hole drilled and T-head pin applied. On cars receiving schedule repairs, regardless of last inspection date, draft gears must be taken down, thoroughly inspected and necessary attention given and stencilling changed. Draft-gear carrier must be secured with rivets.

Reweighing and restencilling.—It is important that cars be reweighed when due as it entails a loss in revenue when the stencilled weights and load limits on cars are not correct due to not having been reweighed when due.

Cars receiving schedule repairs, regardless of last stencilled date, should be reweighed and restencilled strictly in accordance with A.A.R. Rule 30.

Safety appliances.—Safety appliances should be carefully gone over and put in first-class condition. Running-board saddle bolts should be tightened and screws properly secured in running boards. Hand-brake wheels, ratchets and dogs must be gone over carefully. Geared hand brakes such as the Ajax, Equipco, Klasing, Universal, etc. should be examined and lubricated by applying oil to the shaft bearings.

Lubrication of center plates.—Center plates should be lubricated by partly jacking up the car for this purpose. A cheap grade of lubricant will be furnished for this purpose.

Side doors.—On house cars the doors should be given the same careful attention as the brakes and draft gears; after necessary repairs are made and the door operates freely without dragging on door guides or track, the door-hanger roller pins should be oiled. Defective door hangers and sealing devices must be repaired and where pins are badly worn they must be replaced.

General.—Truck sides and arch bars must be carefully inspected for cracks or fractures, especially on the inside or concealed locations which might escape detection from an outward inspection in train yards. It is also essential to have all bolts properly tightened to prevent undue strain on arch bars. Column and box bolts worn in diameter or having wornout threads should be replaced. Replacements should be made to all defective parts before the car is returned to service.

In order to accomplish the economies contemplated when the period for air-brake cleaning and journal-box repacking was extended by the A.A.R., the work should not be done unless due or overdue as covered in paragraph 2 of these instructions except in the case of cars receiving schedule repairs.

All of the items of work coming under the heading of Annual Work are to be conscientiously taken care of so that cars having had this attention will remain in service for twelve months, barring mishap and probable wheel changes.

Devise Novel Composite Deck for Highway Overcrossing

(*Continued from page 747*)

form slabs for bridge, pier or wharf decks, or, in fact, for heavy-duty floors of any kind.

2. A size and grade of lumber is utilized that is low in cost in comparison with the size ordinarily required for stringers.

3. Thin planks permit effective treatment, practically complete penetration with creosote being obtainable.

4. This type of slab can be designed for negative as well as positive moment, since a sufficient number of the plank stripes to resist the resultant compression can be carried unbroken across the support—an advantage not obtained in ordinary types of timber construction.

5. The wood portion of the slab alone has adequate strength to support loads which may be placed on the deck during construction.

6. No forms are required for the concrete top section.

Who Is Responsible?

Accidents do not just happen—Somewhere along the line there is always a mistake

By W. J. Patterson*

Director, Bureau of Safety, Interstate Commerce Commission

GREAT care is taken to provide operating rules for the guidance of employees which, if enforced and obeyed, will remove from their work the hazards incident to carelessness. However, if such rules are not thoroughly understood or if such rules are not properly observed or enforced, the rules fail to accomplish the purpose desired.

In order to insure a proper understanding of a rule, the rule itself should be stated in clear and concise terms, without ambiguity, and in its interpretation the object to be accomplished by the rule should be given careful consideration. However, a rule should not be interpreted contrary to its ordinary reading; employees are provided with copies of the rules for the purpose of reference and study and it is not doing them justice to place a special verbal interpretation, not warranted by its specific terms, on a rule during the course of instruction and then, for guidance and study, present them with a rule reading at variance with the manner in which they are instructed. If a rule is not worded so that its ordinary reading agrees with the interpretation to be placed upon it, taking into consideration the purpose and intent of the rule, the wording should be made to harmonize with its interpretation.

The problem of instructing properly a vast number of employees is no small task, but unless this is done the possibility of misunderstanding on the part of employees in responsible positions is likely to develop. In order to insure full compliance, it is also of equal importance that operating officers be fully conversant with their own rules. This does not always appear to be the case.

Specific Cases

A number of accidents recently investigated bring out certain facts that are of interest in preventing a recurrence.

Last fall, a cut of cars being shunted into a spur track by a switch engine making a flying switch, collided with a work train which had been unloading material on that track. The work train held an order to work extra from 6:30 a.m. until 6:30 p.m., protecting itself, within the territory where the spur track was located. Late in the afternoon the work train entered that track; the crew closed and locked the main track switch and left the derail in normal position. About an hour and a half later, the switch engine came along and without ascertaining whether or not it was safe to do so, the crew made a flying switch of nine heavily loaded cars and dropped them into the spur track where they collided with the work train which had just started to back toward the main track, but which was stopped before the collision occurred.

In making the movement to the spur track, the switch engine ran outside of yard limits and against the current of traffic without authority or protection for a distance of more than a mile, and also without the air brakes being in operation on the train, the latter being in violation of the safety appliance law. The crew of the switch engine were given no copy of the work order, as required by rule, although they were operating within the limits specified in the work order.

Before leaving for the spur track, the conductor of the switch engine obtained a line-up on trains from the dispatcher and used this information to make the movement to the spur track. This method was usual, was known to the train dispatcher, and had been followed for a period of two or three years; yet the superintendent and the trainmaster claimed they had no previous knowledge of how the work was being performed. A rule also specifically prohibited the making of flying switches except while switching at stations or making up trains in yards.

In the investigation of this accident, the officers placed the greater part of the responsibility upon the conductor of the work train and dismissed him from the service, because he did not protect by flag against trains entering from the main track while his train was occupying the spur. The superintendent construed the words, "protecting itself," contained in the train order, as requiring the work train to provide flag protection at all times and under all circumstances, regardless of where the work train was located, although he admitted that before a crew could enter the spur track they were required to know the condition of the track and also to operate under control while using such track.

Incorrect Understanding of Rules by Officers

He based his decision upon a rule reading in substance that a train receiving a work order containing the protecting itself" provision must, whether standing or moving, protect itself within working limits in both directions in the manner prescribed by Rule 99. In placing an interpretation upon this rule, the superintendent entirely overlooked that part of the rule saying that the train must be protected *"in the manner prescribed by rule 99."*

Rule 99 does not state that a train must be protected at all times and under all circumstances, but outlines certain times and certain conditions in which protection must be provided and these provisions do not cover an instance in which a train is in the clear on a spur track with the switches and derail locked in normal position and upon which track no train is permitted to enter without the crew first having ascertained its condition and further to operate under control while using the track. This investigation not only disclosed a practice of long standing involving a disregard of operating rules and federal laws on the part of employees, but also

* From an address delivered before the New Haven Railroad Club in New Haven, Conn., April 20.

disclosed that the operating officers had an incorrect understanding of the requirements of their own rules, as a result of which they misplaced the responsibility and discharged the wrong man.

Head-On Collision

A serious head-on collision occurred on a railway where, because of a strike of train and engine employees, an unusual operating condition existed, trains being operated by newly employed men. A southbound freight train was given two "19" orders at "A," one of which contained a meet with an opposing train at "B," an industrial spur track located only 3,100 ft. south of "A." None of the crew of the southbound train was well acquainted with the physical characteristics of the division, nor had they ever been examined regarding their knowledge of the line, although they had passed examinations on the operating rules.

The engineman failed to show the orders to the fireman or head brakeman and apparently read but one of the orders he had received; he mentioned the contents of one order but said nothing about the meet at "B." The conductor failed to show the order to the flagman and after reading the order himself and not knowing where "B" was located, he began looking in the timetable for its location. As the place was not shown as a station but was listed in the back of the timetable as a business track, by the time he had discovered its location his train had covered more than the 3,100 ft. between the two points, and it collided with the opposing train south of the meeting point.

It had been a practice of long standing on this road for trains to meet at locations listed in the back of the timetable as business tracks; however, the newly employed men were not advised of this fact when they were instructed and examined on the rules and the conductor stated that he was not expecting to encounter an opposing train until he had at least reached the first siding shown on the timetable and that he would have stopped his train at that point if he had not located the meeting point in the timetable before reaching it. Failure properly to instruct the new employees regarding the practice of meeting trains at points other than those provided for by rule, together with the failure of the dispatcher to take extra precaution when working with employees not well acquainted with the road, as required by rule, was responsible for this accident.

While the meeting point technically was not the station at which the southbound train received the meet order, it was located but 3,100 ft. south of that point and within the purpose and intent of the rule requiring the dispatcher to take extra precautions when issuing a restricting order to a train at the restricting point, it was one and the same place. In the interpretation of this rule, the train dispatcher entirely overlooked the purpose and intent of the rule.

Another Collision

Another head-end collision occurred under conditions in which it should have been impossible for such an accident to take place. This was on a single-track line protected by an automatic block-signal system; the two trains involved held a positive meet order with each other and adverse weather conditions were not involved. A westbound freight train held a meet order with an eastbound freight train at the top of a grade, but when it reached the foot of the hill, it was found that considerable delay would be encountered by waiting for a live stock connection. In order to avoid delay to the opposing train, through waiting for them at the meeting point, the dispatcher instructed the crew of the westbound train to take the head end of their train to the top of the hill and release the opposing train, and to follow that train down the hill with their engine and get the live stock.

The head end was taken to the top of the grade and

Misinterpretation of Operating Rules Is a Prolific Source of Accidents of This Kind

left on the main track between the switches of the siding. As the opposing train had not yet arrived, the head brakeman was left at that point with instructions to head it through the siding when it arrived, and to notify the crew that the engine and rear portion of his own train would wait for them at the foot of the hill. An eastbound passenger train was due at the top of the hill an hour or so later and the conductor of the westbound train instructed his head brakeman that if he had not returned to the top of the hill with the rear end by the time the passenger train arrived, to let that train come on down the hill.

His conductor then returned to the foot of the hill with his engine, going ahead of the freight train instead of following it as he had been instructed, and that train later came down the hill and passed the rear end at the foot of the grade. When the light engine arrived at the foot of the hill, the crew were given an order establishing a meeting point at the top of the grade with the passenger train, which the head brakeman had been told to let proceed in the event the rear end had not returned before they arrived. The head brakeman of course knew nothing about the order that had been issued establishing a meet between his train and the passenger train, and when the passenger train arrived he flagged it and headed it through the siding and told the crew to go on down the hill, as the rear of his train would wait for them at that point. The passenger crew protested against this move in view of the meet order they held, but the head brakeman said that he was flagging for the rear end of his train and it would be all right to proceed.

The general superintendent and the trainmaster were on the passenger train and overheard the conversation between the passenger conductor and the freight brakeman, but they said nothing and the passenger train left the meeting point without complying with the meet order or getting in touch with the dispatcher by telephone as required by rule, although there was a telephone located at that point. As the passenger train was about to enter the main track from the siding, the automatic block signal at that point was displaying a stop signal for their train; however, the freight brakeman told the passenger engineer that this was probably because the preceding freight train was still in the block, and the passenger train passed the signal in stop position and continued, without being preceded through the block by a flagman as required by rule, and collided with the engine that was bringing the rear portion of the freight to the top of the hill under the meet order with the passenger train.

Here was an excellent opportunity for operating officers who were on the ground at the time, to enforce observance of the rules. However, they permitted the passenger train to pass the meeting point without fulfilling the meet order and one of them was slightly injured in the collision.

Mine Track Accident

In another case, an engine switching at a coal mine track shoved 18 cars into a siding which was on a grade of approximately one per cent descending toward the entrance switch. The crew attempted to place the caboose next to the cars by making a flying switch. As the engine was approaching the siding in making the running switch the cars on the siding rolled down the grade and cornered the engine at the switch frog. When the engine was cut off from the cars on the siding, the brakeman making the cut claimed that after the train line was parted he opened the angle cock on the head car to set the air, but that he did not set any hand brakes. However, it was proved by tests after the accident that if the brakeman had done as he claimed, the cars would not have moved. During the investigation, the officers repeatedly referred to a rule appearing under the heading "Brake Test On Incoming Trains" which reads as follows:

"On stopping train where it is to be left, engineman should at once add to whatever brake pipe reduction was required for the stop enough to make a total reduction of 25 lb. Brakeman should not close angle cock until engineman signals (one blast of whistle) that application is completed."

This rule referred to "brake test on incoming trains" and had no connection whatever to the circumstances surrounding the accident under investigation; yet it seemed to be the best one the officers could find to cover the situation and was used with much emphasis during the investigation. They completely overlooked another rule which specifically covered the case and which reads in part as follows:

"When engine is detached from train, or cars set off, trainman will apply sufficient hand brakes to secure same at all times. Air brakes must not be depended upon to hold detached trains on grades."

This latter rule positively prohibits the use of air brakes for holding detached trains on grades, while the officers, who had cited an inapplicable rule, criticized employees for failure to do the very thing that the proper rule prohibited. This illustrates the fact that officers should be thoroughly conversant with their own rules. If the officers who are directly responsible for supervision of operation and enforcement of operating rules are not themselves fully conversant with their own operating rules, it can hardly be expected that the employees whom they supervise will have a correct and uniform understanding of the requirements of these rules.

Rear-End Collision

Another investigation covered a rear-end collision between two freight trains. The accident occurred on the main track inside of yard limits and also within automatic block-signal and automatic train-stop territory. Day was just breaking and a dense fog prevailed at the time. The leading freight train received a caution signal and reduced speed as required by the indication and finally stopped within a distance of 4,500 ft., with the caboose 125 ft. beyond the next signal. The flagman put down two torpedoes, one 37 ft. and the other 117 ft. behind his caboose, and then walked back to a point two or three car lengths beyond the signal near his caboose, which would place him approximately 300 ft. from the rear of his train.

The engineman of the following train also received a caution indication at the signal 4,500 ft. in the rear and he forestalled an automatic application of the brakes by operating the forestalling switch of the automatic train-stop device, then reduced the speed of his train so that he approached the next signal at a speed of from 8 to 12 m.p.h. He had previously been able to see signal indications through the fog for a distance of about 300 ft. and expected to find the same conditions at the next signal. However, the fog in that vicinity was considerably heavier, and the engineman was unable to see the signal indication until he was practically upon it, the result being that the engineman saw the flagman, the signal and the standing caboose at about the same time.

The flagman used nothing but red and white lanterns when he flagged the approaching train, which were practically useless in the dense fog, although he had fusees

in his possession; and he did not drop off any fusees when his train reduced speed for the caution signal. The present book of operating rules in use by this railroad was adopted in July, 1924; the flagging rule of this road makes no provision for rear end protection to a slowly moving train, other than requiring the flagman to proceed back rapidly to a distance to insure full protection, etc.; there are no provisions calling for fusees to be dropped from the rear of a slowly moving train as added protection.

Rule 93, governing main track movements within yard limits, dispenses with flag protection within yard limits except against first-class trains. Second-class and extra trains must move within yard limits prepared to stop unless the main track is seen or known to be clear. A member of the rules examining committee, however, stated that at all instruction and examination classes conducted during the past four years, all employees had been instructed that full flag protection, as prescribed by Rule 99, was required of all trains occupying the main track within yard limits, regardless of the provision of Rule 93, and that when a train is moving under conditions in which it might be overtaken by a following train, lighted fusees must be dropped off as necessary to insure protection. These requirements are not supported by the rules as written.

The current timetable took effect in September, 1936, and under special, general instructions, operating Rule 93 was modified by requiring yard engines, while using the main track under Rule 93, to observe the requirements of Rule 99 at all times; nothing is said, however, with respect to other trains doing so. The member of the rules examining committee stated that Rule 93 in its present form has not been satisfactory for the past four years and is to be rewritten. However, there can be no justification for allowing an unsatisfactory rule to remain in the book of rules for such a length of time without supplementing it with an appropriate rule in such a manner that it may be constantly before employees whose duties are affected thereby.

If it was intended that the requirements of Rule 99 should be observed by all trains regardless of the provisions of Rule 93, then all trains should have been included in the rule as modified by timetable instructions, instead of limiting these requirements to yard engines only. The same principle applies to Rule 99.

Nothing will insure greater success in the operation of trains, with respect to safety, than knowing that all employees whose duties are affected thereby have a thorough, accurate and uniform understanding of the rules. Such a condition, supported by proper observance and enforcement, is the solution of most accident problems.

Communications . . .

Handling Hand Luggage

To the Editor: Chicago, Ill.

The many recent improvements introduced by the railroads in passenger cars have added greatly to the comfort and convenience of passengers, but they still have to endure the inconvenience and annoyance caused by the porter piling hand luggage on the car platform when trains are entering terminals.

Recently several railroads have followed the European practice of providing luggage compartments in their cars, and in the case of the new Southern Pacific Daylight trains (*Railway Age*, March 13, page 418) two such compartments have been located near the end of the car and opposite each other. Thus the littering up of the seats, aisles, etc., with luggage is avoided by placing it in these compartments where it is under the control of the porter.

In connection with two such luggage compartments, it is suggested that a sliding door be placed in the side of the car at the back of each compartment for the removal at stations of hand luggage direct from the compartment to the station platform, thus leaving the aisle and car platform unobstructed for the quick and orderly egress of passengers from the car to the station platform.

With high station platforms, the luggage would be passed directly from the compartment to the station platform. In the case of low platforms, if desired, a baggage truck could be placed in front of the sliding door and the luggage placed on it.

As a further means of expediting the handling of luggage, especially in connection with important trains operating between larger terminals, one low light-weight truck with a suitable rack could be provided and placed in one of the compartments. During the run, the luggage of the passengers going to the large terminals would be placed on this truck. Upon arrival at the station, the sliding door would be opened and the truck pushed to the station platform. If the station platform is low, it could be pushed on to a conventional baggage truck. The luggage of the passengers getting off at intermediate stations could be placed in the compartment which is not provided with the truck, and the porter could handle this relatively small amount as at present.

A number of railroads assign important trains to certain designated station tracks, but this is not at all times practical, due to operating conditions within the terminal. Under these conditions, if the porter had not placed the luggage in the compartment which came along side the station platform, the truck with the luggage could readily be pushed across the aisle to the compartment which did come along side of the platform.

If the truck should become inoperative, or if the sliding door should stick or become frozen fast during severe weather, the porter could handle the luggage as at present.

John L. Mohun.

Alternate Route Round-Trip Tickets Would Boost Travel

To the editor: New York.

I read with interest the letter from J. D. Rahner, general passenger agent, Florida East Coast, in April 24 issue, urging that *all* roads have reduced-rate round-trip tickets, good at all times. (These already are in existence in the West I believe, although not in the East.) There can be little doubt that such a method of rate-making would induce travelers to go and *return* by rail, rather than making their return journeys by air, as many now do. (The air-lines have the smartest rate-making policies of any transportation lines, and the rails must emulate them, or continue to see many business men favor the airplanes).

But to enlarge a bit upon Mr. Rahner's suggestion, and to move into his own territory, why will not the southern roads, and the eastern ones too, for that matter, permit diverse routes on round-trip tickets? Do they think that a traveler has so little imagination that he has no desire to return by a different—even if adjacent—route? And cannot they realize that such diverse route privileges would "even" themselves up so that no road would suffer, nor would any gain an appreciable advantage?

American railroad tickets are still too closely restricted, I believe. The wider the latitude permitted, the greater the popularity of railroad travel, even though this may not coincide with precedents upon which the fare-structure still seems to be based. Only in transcontinental tickets is there any option allowed the traveler. I should like to ask Mr. Rahner why a round-trip ticket to Miami is not offered allowing the passenger to use one route going down, and another returning, in order to stop at certain resorts touched by only one of the lines. If any knows any logical reason why this should not be done, I should like to learn the reason.

Franklin Snow.

NEWS

Freight Handlers Strike Delayed

Row between longshoremen and clerks calmed when President steps in

A threatened strike by members of the Brotherhood of Railway and Steamship Clerks, Freight Handlers, Express and Station Employees in the New York metropolitan area was postponed this week by action of President Roosevelt in appointing an emergency board of mediation, as provided in section 10 of the Railway Labor Act. As stipulated by the Act, the board, which consists of F. M. Swacker, attorney-at-law, W. H. Davis, former director of the N.R.A., Compliance Division, and Prof. I. L. Sharfman, of the economics department of the University of Michigan, must report to the President within thirty days, after which an additional period of thirty days must elapse before strike orders can be given. Mr. Swacker, speaking for the emergency board, has announced Monday next as the tentative date for opening of hearings, subsequent to selection of a chairman and preparation of procedures.

According to the office of J. G. Walber, vice-president of the New York Central, the local members of the clerks' union threatened to strike on the following demands: 1. Elimination of contract labor in railroad pier operations. 2. Increases in rates to 73 cents per hour for laborers and 75 cents for stowers (amounting in some cases to increases beyond the 20 cent rise demanded by the national clerks' organization to all the rail carriers in the country on March 4). 3. Full pay on eight-hour basis for part-time employees. 4. Paid vacations of at least 12 days per year for all classes of workers. It was also demanded that these increases in remuneration be extended not only to pier freight handlers, but to all other classes of employees covered by the clerks' union (outside of general office forces), including ticket sellers, baggage handlers, gatemen, janitors, etc.

The situation is further complicated by the fact that the emergency board must decide a jurisdictional dispute between the clerks' brotherhood and the International Longshoremens' Association, both of which are affiliates of the American Federation of Labor. On April 8, the longshoremen filed demands upon contractors of pier freight handlers, operating on the Pennsylvania, Erie, Baltimore and Ohio, and Long Island, for increases in pay, which brought about a conflict with the B. of R. C., representing freight handlers on the Erie. To permit operations on Erie piers, the latter union relinquished jurisdiction over those facilities temporarily. After the Clerks had presented their wage demands to the New York carriers on April 16, the longshoremen's organization immediately demanded that it be recognized as sole bargainer for the pier freight handlers on the railroads involved.

Because of the three party nature of the disputes, the New York railroads submitted the case to the services of the National Mediation Board, headed by O. S. Beyer, which in turn invoked the selection of the emergency board by the President.

New York Commercial Zone

The Interstate Commerce Commission, Division 5, has postponed from April 5 to June 5 the effective date of its order prescribing boundaries for New York City's commercial zone wherein motor vehicle operations will be exempt from regulatory provisions of the motor carrier act, other than those relating to maximum hours of service of employees and safety of operation or standards of equipment.

May to Be "Careful Switching Month"

In an effort to reduce freight claims and equipment damage due to cars striking too hard in switching, it is proposed that carriers make a special effort during May to eliminate the rough handling of cars. It is suggested that divisional and yard subcommittees be appointed on various railroads to study switching and that switching crews make a special effort not to exceed critical speeds when coupling cars.

Southern Pacific Holds Sales Institute

A sales institute is being conducted by the Southern Pacific under the direction of George B. Hanson, district passenger agent, for the benefit of his entire staff of 150 salesmen, clerks, cashiers, secretaries, messengers and others in the San Francisco area. The first meeting of the institute was held on March 22. Subjects for instruction and discussion are divided into seven groups for consecutive weeks, with meetings on Monday and Thursday of each week so that every member of the district staff can attend. The subjects studied include organization, train service, tariffs and fares, tickets, accounting, commissary, baggage, telephone and telegraph, salesmanship and advertising.

Hears Round-Table Talks on Transport

Spokesmen for all agencies take part in program at U. S. Chamber meeting

Speaking at the round table on transportation as a part of the United States Chamber of Commerce's 25th Annual Convention, in Washington, D. C., on April 28, Carl R. Gray, president of the Union Pacific, told his hearers that he was proud of the fine record the railroads had made during the depression and asked what other businesses could point to as good a record of service. Appearing with speakers representing all the other forms of transportation, Mr. Gray said that there was a place for all and that the people of this country are entitled to the best and most economical forms of transportation, whether they be rail, water, bus or air.

Mr. Gray went on to say that the time for complaining is past and added that he felt that the fine record of the railroads in perfecting schedules and utilizing new equipment would be continued in the future.

Other speakers at the round-table discussion included James A. Farrell, former president of the United States Steel Corporation, who said that he "hoped the Maritime Commission will see the light on shipping subjects"; William K. Jackson, vice-president and general counsel of the United Fruit Co., who discussed the present lack of shipbuilding in this country and expressed the hope that the new commission would broadly interpret the Merchant Marine Act of 1936. Senator William D. Rodgers, of Pittsburgh, Pa., who operates barges in the Pittsburgh area, told the group that his business was booming and urged that the railroads give more consideration to joint rail-water rates. Edgar S. Gorrell, president of the Air Transport Association, spoke briefly on the future of air travel and said that his industry welcomed regulation.

Arthur M. Hill, president of Atlantic Greyhound Lines, of Charleston, W. Va., presided. There was no discussion of the speeches.

President Signs Guffey Coal Bill

President Roosevelt of April 26 signed the Guffey-Vinson coal bill providing for the creation of the National Bituminous Coal Commission to regulate the bituminous coal industry under a code of fair competition. On the same day he sent to the Senate names of members for the new commission.

G. M. Harrison on Labor's Politics

Favors such action only where collective bargaining is impossible

A plea for fair play between capital and labor was delivered in New York in an address prepared by George M. Harrison, president, Brotherhood of Railway and Steamship Clerks, and chairman, Railway Labor Executives' Association, and delivered in his behalf by D. B. Robertson, president of the B. of L. F. & E., when Mr. Harrison was called away by a death in his family. "In order to give labor an equivalent balance of opportunity with management, it is necessary for management to adopt a more enlightened point of view toward representatives of employes, just as it is imperative that the leadership of labor recognizes its responsibilities toward industry," his address to the annual conference of the National Association of Mutual Savings Banks read.

"It takes intelligent minds on the part of both labor and management to negotiate a settlement of demands that may be thought to conflict but which in reality do not. Progress has been made in the railroad industry along this line. It is logical for labor to make its demands progressively. It is also sensible for management to consider such demands in conference, so that there will be proper settlements consistent with fairness to labor as well as the ability and capacity of industry to meet changing conditions."

Turning, for a moment, from the consideration of immediate problems, Mr. Harrison took occasion to pay tribute to the late Samuel Gompers. Speaking of the political aspects of labor, he said, "From the days of Andrew Jackson, labor has been in politics. It has been necessary to organize and utilize labor's voting power. But, at the same time, it was necessary to create stability in unionism. It is to the leadership of Samuel Gompers that we owe the attainment of that objective. The struggle of workers away from the subsistence level or slave stage of employment, their patient suffering and endurance during periods of recurring business depressions, the handicaps arising from misunderstandings of purposes and motives, show how much the cause of labor is indebted to his genius.

"Although the instrument of the strike always has had to be relied upon, the real objective in the minds of the great pioneers among the leaders of labor was collaboration with management. They sought then what is now being so belatedly recognized —the right of collective bargaining. It was the absence of cooperation in this respect whereby labor encountered its greatest obstacles. Since the worker did not possess economic power with which to gain equality of bargaining power and prestige he was compelled to fall back on the only instrument at his command—that of politics."

Referring specifically to the outlook for the rail unions, Mr. Harrison continued, "Under the Railway Labor Act, railroad management and labor have set up facilities of regulation and assistance within the structure of government, designed to provide for mediation and settlement of industrial disputes. Since this procedure is based upon fundamental right, it must succeed. Although it may be far from perfect, I am sure that experience will prove that it is sound and effective. It seeks to observe recognition of responsibility on the part both of management and men. This is the vital factor in bringing stability to the railroad industry and satisfaction to its employes."

Glancing at the future, he added, "The task the nation has ahead in organizing the vast numbers of unorganized workers requires fine balance and clear perspective. Otherwise, our economy will be unbalanced and no one satisfied. This we must endeavor to avoid. We are endeavoring to develop a wise and constructive criterion and practice in the railroad field, within the limits of private enterprise, which should help to point the way for all workers and management. It will take tolerance, patience and fair dealing on the part of all of us."

"Super Chief" on Exhibit

New equipment, which will replace the present equipment of the "Super Chief" of the Atchison, Topeka & Santa Fe on May 18, was exhibited at Chicago on April 27 and 28. The stainless steel cocktail lounge, observation lounge, baggage cars and sleeping cars of this train were recently built by the Edward G. Budd Manufacturing Company. The train will make one round trip weekly between Chicago and Los Angeles, on a schedule of 39¾ hr.

Steam Railway Accident Statistics

The Interstate Commerce Commission's completed statistics of steam railway accidents for the month of January, 1937, now in preparation for the printer, will show:

Item	Month of January 1937	1936
Number of train accidents	845	818
Number of casualties in train, train service and nontrain accidents:		
Trespassers:		
Killed	143	135
Injured	154	168
Passengers on trains:		
(a) In train accidents:*		
Killed	...	1
Injured	52	82
(b) In train-service accidents:		
Killed	...	...
Injured	155	139
Travelers not on trains:		
Killed	1	2
Injured	87	72
Employees on duty:		
Killed	72	66
Injured	2,054	1,869
All other nontrespassers:†		
Killed	182	162
Injured	716	727
Total—All classes of persons:		
Killed	398	366
Injured	3,218	3,057

* Train accidents are distinguished from train-service accidents by the fact that the former cause damage of more than $150 to railway property.

† Casualties to "Other nontrespassers" happen chiefly at highway grade crossings. Total highway grade-crossing casualties *for all classes of persons, including both trespassers and nontrespassers,* were as follows:

Number of accidents	458	444
Persons:		
Killed	170	164
Injured	527	543

End Cotton Belt Revamping Quiz

Five plans for refinancing the S. S. W. have been offered to the Commission

Hearings on the reorganization of the St. Louis-Southwestern before the Interstate Commerce Commission were concluded on April 24, after the commission had received five separate proposals for the recapitalization of the road. Commissioner Mahaffie announced that the filing of briefs must be completed by June 10, thus making the closing of the hearing in this case the third one to be completed—the commission already having closed hearings in the cases of the Western Pacific and the Chicago & Eastern Illinois. The final session was featured by a lively exchange between Walter E. Meyer, a stockholder, and Henry W. DeForest, former chairman of the board of Southern Pacific and now chief financial officer. Mr. Meyer repeatedly tried to question Mr. DeForest regarding the events leading up to the filing of the petition for reorganization, but counsel for the Southern Pacific objected that such procedure was not relevant to the matter being tried, and the objections were consistently sustained by commissioner Mahaffie who continually cautioned Mr. Meyer to question the witness regarding his actual participation in the Cotton Belt reorganization proceedings.

At the final session the commission received the fifth plan of reorganization, that of the Dutch holders of Cotton Belt first terminal and unifying bonds. With this plan, which would leave the road's principal obligations undisturbed, the commission has received five proposals for reorganization They are as follows: The plan of the management, the plan of the Southern Pacific which controls the Cotton Belt through stock ownership, the plan of the Glines protective committee for the terminal and unifying bonds, and the plan of the Chase National Bank and the Mississippi Valley Trust Company who are minority creditors.

Appearing before the commission on April 23 as a witness for the plan of the Southern Pacific, Hale Holden, chairman of the board, told the commission that the railroad did not feel that a satisfactory plan for the merger of the Southern Pacific and the Cotton Belt was available or practicable at this time. He also said that he did not feel that a lease of the property would be satisfactory, but expressed the hope that at some time in the future a lease or purchase might be consummated. Mr. Holden, in testifying for the plan of the Southern Pacific which provides for fixed charges of $1,709,369, about $63,000 less than the amount provided in the plan of the Chase National and the Mississippi Valley Trust Company, told the commission that he felt that this plan was preferable in that there would be no accumulations of interest on contingent obligations. He added that he felt that having interest or dividends

cumulative would produce an "exceedingly unhealthy outlook."

In discussing the possibility of merger of the Southern Pacific and the St. Louis-Southwestern, Mr. Holden said that "the Southern Pacific Company has given deliberate consideration to the matter of a proposed merger with or a lease of the St. Louis-Southwestern properties, but has reached the conclusion that no satisfactory plan for such merger or lease is available or practicable at this time." He went on to say that they "hope that the St. Louis-Southwestern may again be brought to an earning capacity equivalent to or exceeding its record made in the years prior to 1930, but it is now much too early to arrive at an informed judgment as to what can be done toward that end." "At the time Southern Pacific Company acquired control through stock ownership of the St. Louis-Southwestern, it was our declared intention that the latter should eventually become a part of the Southern Pacific System," he asserted. "That intention has never been abandoned, and we still feel that such a result is logical and to the best interests, not only of the parties immediately concerned as creditors or owners, but to the general public as well." Mr. Holden also said that they had not overlooked the savings that might accrue from a single management, but that he felt that such savings were problematical. He added that the companies were confronted with the problem of wage dismissal agreements "that would tend to defer the greater portion of the savings that might have been possible of accomplishment prior to the adoption of such agreements." Mr. Holden also discussed the subject of loss of rail traffic to trucks, and said that he thought that much of this traffic would never be regained, thus permanently affecting the finances of the Cotton Belt.

On April 22, F. W. Green, vice-president of the Cotton Belt, testified that he felt that in the future there would be an upward swing in transportation costs, and particularly in the item of labor, saying that "we are getting some very expensive decisions from some labor boards." Mr. Green also stated that the condition of the rails on the road was worse at the end of 1936 than at the beginning of the year. He added that carloadings were 15 per cent above the corresponding period of last year and that the prospects for crops in his territory are good.

Daniel Upthegrove, president of the company, also appeared and was questioned by Stockholder Meyer, who requested that the commission make an investigation of the Southern Pacific's control of the road. Mr. Meyer asked Mr. Upthegrove why the Cotton Belt had not entered into pooling arrangements with the Rock Island and other lies regarding the handling of perishable freight, and Mr. Upthegrove replied that nothing was done along this line for the reason that he felt that the Cotton Belt could make more by handling the traffic itself.

Burlington to Have Longest C.T.C.

The Chicago, Burlington & Quincy is to install centralized traffic control on 112 miles of single-track line between Denver, Colo., and Akron, which will constitute the longest installation of c.t.c. on any railroad. The switches at approximately 20 passing sidings are to be equipped with power machines, which, together with the signals for directing train movements, will be controlled remotely from a centrally-located control machine. Thus train stops or delays for handling the switches by hand will be eliminated, as will also the delays now occasioned in stopping or slowing up the trains in order to pick up train orders.

Under the new c.t.c. system, train movements will be directed by signal indication rather than by the time table and train order system. The cost of the project is to be approximately $750,000, and construction is to be started at once, with the hope that the installation will be completed early this autumn.

Latimer to Remain on Railroad Retirement Board

President Roosevelt has withdrawn from the Senate the nomination of Murray W. Latimer, chairman of the Railroad Retirement Board, for a membership on the Social Security Board. Mr. Latimer, who will remain in his present position, had requested the withdrawal because of the requirement that not more than two members of the Social Security Board be identified with the same political party. Two Democrats are already members of the board.

Canadian National Modifies Schedules

On April 25, the Canadian National, in view of daylight saving time, made some important changes in schedules of trains operating in and out of Montreal. At the same time, several reductions in running time were put into effect. The Continental Limited between Montreal and Vancouver had fifteen minutes cut from the trip in both directions, and the run of the Washingtonian, operating to Washington, D. C., was shortened one hour in either direction.

"Flash" Averages Thirty Cars Per Trip During First Year

A total of 10,123 carloads of freight in the first year of operation, or an average of more than 30 carloads per trip was carried by the "Flash," the fast merchandise freight train placed in service by the St. Louis-San Francisco, between St. Louis, Mo., and Oklahoma City, on April 24, 1936. This train was inaugurated to provide overnight service, and according to J. R. Coulter, general traffic manager, the record made by the train during its first year of operation exceeds original expectations.

New Haven Railroad Club Elects Officers

The annual safety meeting of the New Haven Railroad Club was held at the Hotel Taft in New Haven, Conn., Tuesday evening, April 20. The principal address, made by W. J. Patterson, director, Bureau of Safety, Interstate Commerce Commission, appears elsewhere in this issue. The annual presentation was made of the various safety plaques, certificates and other awards. This also was the annual meeting of the club and the following officers were elected: President, A. A. Drummond, sales traffic manager; first vice-president, A. L. Ralston, general mechanical superintendent; second vice-president, H. L. Filer, assistant general counsel; treasurer, A. W. Bowman, assistant treasurer; and secretary, Leslie H. Tyler, special representative, all of the New York, New Haven & Hartford Railroad.

New York Port Authority Publishes New Data

The Port of New York Authority, to fill a demand for data never hitherto compiled locally, has recently issued "Port Information Bulletin No. 6" entitled "Port Charges at the Port of New York." Besides the various charges applying against vessels and cargoes, the pamphlet includes special information on other matters pertaining to the handling of commerce at the Port of New York, especially in facilities for cargo transfer.

The bulletin, which is intended particularly for the use of steamship companies, freight forwarders, port officials, railroads and government departments, explains: "In addition to its construction and operating activities, the Port Authority is dedicated to the improvement of port facilities by coordinating existing terminal operations; securing allotments from the federal government for deeper harbor channels and connecting waterways; development of commerce by negotiating removal of trade restrictions and prejudicial transportation rates. This bulletin on port charges is a contribution to a broader knowledge of the port on the part of shipping and shippers."

New Haven Offers New Runs

The New Haven has placed in operation several new trains, as announced in the new Spring time tables. One of these is the "42nd Street Express" which will leave Boston, Mass., at 12:00 noon daily for New York, with stops at important intermediate points, making the run in five hours flat.

In the reverse direction, adjustments will result in the filling of a gap which existed in the New York-Boston service between 10:00 a.m. and 12:00 noon, by the operation of the "Hell Gate Express" to leave Pennsylvania Station, New York, at 11:00 a.m., and arrive at Boston at 4:10 p.m. Heretofore, this train has been operated at an earlier hour, combining at New Haven with "The Bay State" out of Grand Central Terminal. A Friday night "Housatonic Express," the advance guard of extra summer service, leaving New York at 5:27 p.m., has also commenced operation with the change in time.

The New Haven will resume operations of its bicycle trains, on May 2, when it will operate a train from New York to Canaan, Conn. There it will direct the cyclists over protected roads and paths for a lengthy jaunt. The party will leave Grand Central at 6:55 a.m., eastern standard time, and return from Canaan at 5:32 p.m.

"Daylight" Meets With Popular Approval

A total of 7,813 persons, 3,763 southbound and 4,050 northbound, rode the "Daylight," new streamlined train of the Southern Pacific, on the 22 trips made by the train during its first 11 days of service between Los Angeles, Cal., and San Francisco. During this period, the train earned $4.89 per mile northbound and $4.84 per mile southbound. From March 21 to April 20, the number of passengers carried reached a total of 18,226 for the 62 trips.

Although not the first streamlined train to be operated out of San Francisco or Los Angeles, interest in the new train was so great that on several days it was necessary to post the notice, "we regret to announce that all space on today's Daylight is occupied." It is the practice on this train to reserve all seats in chair and parlor cars before train departure, and consequently no "standing room only" tickets were sold.

Prior to inauguration, a total of 153,535

Courtesy S. F. Call-Bulletin

"Hmm! Rods Streamlined, Too!"

persons passed through the train in the 12 days it was open to the public in Los Angeles, Colton, Ontario, Pomona, Santa Barbara, San Luis Obispo, Salinas, San Jose, Palo Alto, San Francisco, Oakland and Sacramento. More than 20,000 persons visited the train during one of the three days in Los Angeles, and nearly the same number was attracted by the one-day exhibit in Oakland.

On March 21 christening ceremonies were held in both San Francisco and Los Angeles. The National Broadcasting Company divided a 15-min. period, leading off with the program in the northern city, where President A. D. McDonald, Vice-President J. H. Dyer, and his daughter, Miss Lorene Dyer, were the principal participants. At the southern terminal, Vice-President Felix S. McGinnis, Miss Olivia deHavilland, star of Warner Brothers studio, and Franciscan Father Joachim de Prada, pastor of San Gabriel Mission, took the leading roles.

A few hours after the christening ceremonies, the northbound flyer made its second radio appearance. At Goleta, 112 mi. north of Los Angeles, radio station KNX's announcer and commentator, Gary Breckner, gave Columbia Broadcasting Company listeners a 15-min. program termed a "passing show," during which the sound made by the train was broadcast. At the end of their 471-mi. runs, made in 9 hr. 45 min., the fastest schedule ever set for trains local to the Southern Pacific lines, crowds waited to welcome the trains.

The attractiveness of the Daylight's service is enhanced by several innovations. Red Cap porters have specially painted baggage carts marked with car numbers to guard against any mixup in handling luggage. Travelers aboard the Daylight are assured plenty of personal service, for there are 45 employees for each trip, including enginemen, trainmen, a passenger agent, a maid, porters, news agents and the personnel in the diner, coffee shop and tavern bar.

Burlington Doubles Traffic to Twin Cities

The Chicago, Burlington & Quincy's passenger traffic on its Chicago-Twin Cities train is now more than twice what it was prior to the inauguration of its "Zephyrs" on April 21, 1935, according to Albert Cotsworth, Jr., passenger traffic manager. The increase during January and February was 126 per cent over comparable months of 1935. Of these passengers, 54 per cent timed their trips to use the Zephyrs. Since April 21, 1935, the original twin Zephyrs and the seven-car twins, which replaced them last December, have traveled 1,213,357 miles between the Twin Cities and Chicago. Since the inauguration of the Zephyr service, there has been a reversal of travel habit, a larger percentage of persons now traveling during the daytime. During the period from November, 1934, to February, 1935, 83.7 per cent of the traffic moved at night and 16.3 per cent during the daytime, while during the period from January 1, 1936, to April, 1937, 28.7 per cent moved at night and 71.3 per cent during daytime.

Ex Parte 115 Hearings at Chicago

Taking of testimony in Ex Parte 115, begun at Chicago on April 22, continued during the second week before Commissioner Clyde B. Aitchison of the Interstate Commerce Commission, witnesses testifying on a prescribed list of basic commodities and the relationships of class rates. During the first five days shippers testified in opposition to the carriers' proposed increases, cement shippers testifying before Commissioner Aitchison. Petroleum interests, heard by Examiner Edward J. Hoy, introduced statistics to show the extent to which rates on cement in certain territories were higher at present than they were in 1915 and to show that in relation to comparable commodities, cement rates are so high that railroads are losing traffic. Petroleum shippers contended that railroads will not realize any additional revenue from the increased rates, for the $3,500,000 expected on the basis of 1935 traffic would be considerably reduced by the transfer of this traffic to competitors. Coal shippers made the same contention and further asserted that competitive fuels, oil and gas would cut further into the coal business.

U. S. Chamber Referendum on Fourth Section

A proposal that the long-and-short-haul clause of the Interstate Commerce Act be repealed has been put to a referendum vote of member organizations of the Chamber of Commerce of the United States. The proposition, which was brought forward in a report of the chamber's committee on transportation, as it will be voted upon reads: "The Committee recommends that the long-and-short-haul clause should be eliminated from the fourth section of the Interstate Commerce Act, and that a provision be enacted placing the burden of proof upon the carrier to justify long-and-short-haul rates, fares, and charges against claims of violation of other applicable provisions of the Interstate Commerce Act."

As is usual in the chamber's procedure, the referendum pamphlet contains both the committee's report supporting the recommendation and arguments which have been made by those favoring retention of the long-and-short-haul clause. Point by point, counter arguments are set up against the committee's arguments, in order that the members before voting may consider both sides. The committee's reasoning is as follows:

"The operation of the 'long-and-short-haul clause' in the period since the World War has been clearly unsatisfactory.

"The clause included in the original Act of 1887, and amended in 1910, was designed to give the Interstate Commerce Commission special authority over the particular type of rates involved at times when the commission's general rate powers extended only to maximum rates and not to minimum rates. The situation regarding need for such special authority to pass upon long-and-short-haul rates was fundamentally changed in 1920 when the commission was given power over minimum as well as maximum rates in any and all cases.

"The fourth section could well be so modified that cases involving long-and-short-haul questions would be settled under other provisions of the Interstate Commerce Act, particularly the provisions of the first and third sections requiring that rates must be just and reasonable and that they must not cause undue or unreasonable preference or advantage to, or prejudice or disadvantage against, any person, locality or description of traffic.

"Most of the present argument in opposition to any change in the fourth section appears to be based on the assumption that proposed changes would open the way to a revival of the earlier conditions referred to. This asumption beclouds the issue, for, as already pointed out, the powers of the Interstate Commerce Commission over all railroad rates have been greatly extended since those conditions prevailed and there seems no danger of the Commission's permitting a return to them even if the railroads, contrary to their own best interests, desired to do so."

As to the protection of legitimate interests of shippers and the public, the committee says:

"Shipper representatives otherwise favorable to repeal of the fourth section,

and confident in the adequacy of other sections of the Interstate Commerce Act to protect all legitimate interests in cases involving long-and-short-haul questions, have expressed the fear that an undue burden and expense might be placed upon them to prove before the commission the unreasonableness, prejudicial character or other unlawfulness of proposed long-and-short-haul rates to which they might object. To remove this apprehension a provision has been included in the proposed new fourth section placing upon the carrier the burden of proof to justify the rate or charge for the longer distance against any claim of violation of Sections 1, 2 and 3 of the Interstate Commerce Act. With this means readily available to the shipper to require justification before the commission of any proposed new long-and-short-haul rate to which he may object and with the commission's usual vigilance in such matters, it appears that the interests of shippers and the public will be amply safeguarded."

"It is a fundamental transportation principle," the committee goes on, "that there is no exact measure of the reasonableness of a rate and that carriers of various kinds and in various circumstances should be permitted to adjust their rates within reasonable limits in such a manner as to be able to compete for a fair share of the business. This fundamental principle is violated when a long-and-short-haul clause is applied to the railroads as rigidly as the existing clause has been since 1920. Legitimate competition in transportation is excluded and the producers, distributors and consumers who would benefit by the opening up of the natural competitive channels of trade are discriminated against."

Grade Crossings Accidents Increased in January

Increases for the month of January this year, compared with the same month in 1936, in the number of accidents at highway-railroad grade crossings, and in the number of persons who lost their lives in such accidents but a reduction in the number injured, were shown in reports for that month received by the Safety Section of the Association of American Railroads. This increase, an A.A.R. statement says, "took place despite the efforts of the railroads and various safety organizations to induce motorists to use greater caution in approaching and passing over crossings."

Highway-railroad grade crossing accidents in January this year totaled 458, compared with 444 in the same month in 1936. As a result of those accidents, 170 persons lost their lives in January compared with 164 in the same month last year, and 527 persons were injured, compared with 543 in January, 1936.

High Tension Electric Experts to Meet in Paris

The ninth session of the International Conference on High Tension Electric Systems will meet in Paris, France, June 24-July 2. This permanent organization of the Conference Internationale des Grands Reseaux Electriques was organized in 1921 and its biennial sessions bring together delegations from 40 different countries, for the discussion of all problems relating to the design, construction and operation of high tension electric systems. Already 112 technical papers, including six from America, and coming from 20 different countries, are scheduled for presentation at the meeting in Paris. The proceedings are conducted in English, French and German; advance copies of all papers are available to registered delegates. The president of the United States National Committee is Frederic Attwood, vice-president of the Ohio Brass Company, with offices at 50 Church street, New York City.

Commodity Movement By Truck Increased in March

Commodity movements by truck in March increased 25.93 per cent over March, 1936, according to the monthly survey of truck loadings issued by the American Trucking Associations, Inc. The March figures represent approximately the same increase over tonnage hauled by truck in February and an increase of 19.6 per cent over the monthly average for 1936.

The survey, designed to show merely the trend in commodity movement by truck, is based on comparable reports received from 127 motor carriers in 32 states and the District of Columbia. The actual tonnage reported for March was 477,600 tons, as compared with 379,140 in February and 379,242 in March, 1936. The March traffic showed increases over February and over March, 1936, in most commodities, although some carriers reported that their tonnage was decreased due to labor trouble in the automotive, soft coal and trucking industries. The truck loading index figure for March, which is based on the monthly average for 1936 as representing 100, stands at 119.67.

The largest movement of freight was in the general merchandise class, which accounted for more than 55 per cent of the total tonnage. The hauling of general merchandise showed an increase in March of 23.40 per cent over February and 23.38 per cent over March, 1936. The movement of household goods was up 20.3 per cent compared with last month, while petroleum products increased 11.67; automobiles, 66.29; iron and steel, 2.51; groceries, 30.47; and tobacco, 56.17 per cent.

"Perfect Shipping" Discussed at Chicago Traffic Club

Packing, shipping, loading, freight claims, and suggested procedure for improvements were discussed at a luncheon of the Traffic Club of Chicago on April 26, the principal speakers being T. C. Burwell, vice-president of the Staley Manufacuring Company, Decatur, Ill., and C. H. Dietrich, executive vice-chairman of the Freight Claim division of the Association of American Railways. Mr. Burwell showed how shippers can profit by adopting proper methods of handling, packing and loading, while Mr. Dietrich offered suggestions for further improving the handling of freight so as to reduce the need for the filing of claims. Mr. Dietrich also told how one railroad in order to render service to shippers and at the same time eliminate misshipments, checks the addresses of consignees. In a large number of cases shippers have addressed their freight to the wrong states.

New Haven Entertains Fans

About 400 railway "fans" were guests of the New Haven, on April 25, when Railroad Enthusiasts, Inc., New York Division, sponsored a 300-mile tour through Connecticut. Leaving Grand Central Terminal in New York, the party made its first halt at Cos Cob, Conn., where the New Haven maintains its main power plant for the electrified lines, whence they aimed for Hartford, via Danbury and Waterbury, to give the fans a ride over more unfamiliar routes. Then, striking south along the Connecticut River, the excursionists joined the Shore Line at Saybrook, where new streamlined motive power was put in front.

Returning eastward, the party stopped at Cedar Hill yards to view the operations of car retarders and inspect electric and steam locomotives, both old and new, which the road mustered for their observation. Picking up electric power at New Haven, the fans reached New York at about 9:30.

Club Meetings

The spring meeting of the American Railway Magazine Editors Association will convene at the Book Cadillac Hotel, Detroit, Mich., on May 7 and 8.

The Canadian Railway Club will hold its May 10 meeting in the Windsor Hotel, Montreal, Que. At that time T. F. Turner of the general superintendent's office, Canadian Pacific, Moose Jaw, Sask., will present a paper entitled "The Selection and Training of Railway Personnel." An added feature will be the announcement of the winner of the 1936-37 competition sponsored by the club.

The American Association of Passenger Traffic Officers will hold its 79th annual meeting at Miami, Fla., on November 8 and 9.

The Car Foremen's Association of Chicago will next convene on May 10 at the LaSalle Hotel in Chicago at 8 p.m., daylight saving time. The main speaker of the evening will be F. S. Thompson, chief engineer, General American Transportation Corporation, whose subject will be "Tank Cars—Their Design and Services."

An open discussion on questions and problems of car inspectors and car repairers will feature the May 4 meeting of the Northwest Carmen's Association at Ludwig Masonic Hall, St. Paul, Minn., commencing at 8 p. m.

The Railroad Enthusiasts, Inc., Philadelphia division, will hold its first program and dinner meeting on May 7, in a railroad dining car at the Reading terminal, Philadelphia. An open business meeting and presentation of the A. A. R. vocafilm will follow.

Railroad Administration Near Liquidation

Secretary of the Treasury Morgenthau, in his annual report, as director general of the railroads, says that the railroad ad-

ministration is in the final stages of liquidation. The report states that disposition was made of the last suit in favor of the director general and the last suit against him. Under an order of President Roosevelt all files and records of the administration relating to the Minnesota fire claims have been transferred to the General Accounting office. The files and records of the administration consisting of an additional set of freight-rate authorities and all surplus copies of general orders, bulletins, circulars, annual reports, and contracts issued by or drawn in favor of the director-general have been transferred to the Interstate Commerce Commission by order of the President. The files and records of the administration consisting of the original pay rolls and personnel records have been transferred to the Civil Service Commission.

Reduced Feed Freight Rates to End

The U. S. Department of Agriculture's drought committee anticipates that the availability of spring pastures will make it unnecessary for the committee to seek further extension of the expiration dates now governing reduced freight rates on livestock feeds and roughages shipped to drought-stricken points in Nebraska, Wyoming, Montana, North Dakota, and South Dakota. The reduced freight rates to points in Nebraska, Wyoming, southeastern Montana, and to points in the southwestern and southern portions of South Dakota, are scheduled to expire May 15. Rates to other parts of Montana and the Dakotas are scheduled to expire May 31.

Since last July, 666 counties in 12 western States have been affected at one time or another by these reductions, which were on the basis of two-thirds of the commercial rates applicable on hay, concentrates, coarse grains, mixed feeds, and mixed feed ingredients, while on straw and other roughages, reductions were on the basis of 50 per cent of the commercial rates on hay.

National Rivers and Harbors Congress

The National Rivers and Harbors Congress, at its annual convention in Washington, D. C., this week adopted a series of resolutions favoring the construction of additional public works for flood control and waterway development. In the latter connection the Congress adopted a report of its projects committee recommending 15 projects to cost an estimated $31,650,000.

Upon disposing of its recommendations on flood control, the report of the resolutions committee, which was also adopted, turned its attention to the waterways and advocated "the passage of a new river and harbor bill at the present session of Congress in order that our waterway development program may keep pace with our rapidly expanding business requirements, and that additional navigation facilities may be provided to meet the growing demands of commerce and industry." After a bow to the railroads in a suggestion that provision be made for the cost of adjusting their facilities and those of other public utilities located in areas of flood-control projects, the resolutions go on to "emphasize the traditional policy that our navigable waterways be deemed public highways and remain free." Also, the Congress is opposed to the regulation of water carriers by the Interstate Commerce Commission, believing that "unrestrained competition upon these free water highways will regulate rates in the interest of the public."

Several speakers addressed the two-day convention, among them being Secretary of War Woodring; Secretary of Commerce Roper; Maj. Gen. E. M. Markham, chief of the army engineers; and Maj. Gen. T. Q. Ashburn, chairman and president of the Inland Waterways Corporation.

Charges for Grain Doors Cut

The $1 per car charge of western railroads for installing grain doors for bulk grain loading at terminal elevator points has been reduced to 60 cents per car under a decision of the Interstate Commerce Commission, which also makes several other findings in connection with the practice. The report in No. 27284—Board of Trade of the City of Chicago et al vs. Abilene & Southern et al.—also embraces other similar complaints.

Findings of the report in addition to that with respect to the rate are as follows:

It is not unreasonable to require that shippers shall, at their own expense, install grain doors furnished by the carriers.

Where, at shipper's request, grain doors are installed by the carrier it is entitled to a reasonable charge for the service rendered.

Where the shipper elects to install grain doors for bulk-grain loading at terminal elevator points, the doors shall be placed by defendants either in the cars to be set for loading or in stock piles adjacent and convenient to the locations at which the grain is to be loaded into the cars.

That the prescription of adequate rules in defendants' schedules which will act as a deterrent against wanton destruction of their property is reasonable and proper.

That the clause in the existing schedules requiring the shipper to make prior arrangements for the service where he desires the carrier to install grain doors for bulk-grain loading is not unlawful, but the requirement may always be waived.

Commissioner McManamy dissented to the majority report which was by Chairman Miller. It is the former's view, concurred in by Commissioners Splawn and Caskie, that the failure of the carriers to install grain doors without charge in addition to the line-haul rates constitutes noncompliance with their duty to furnish adequate car service. He would apply in the present case the rule of intrastate schedules in Texas which, under a state law requiring railroads to furnish "suitable cars," specifically provides that carriers will prepare cars for bulk grain loading without charge. Commissioners Aitchison and Eastman did not participate in the case.

Car Men Hear Talk on Reclamation

By adopting modern methods of reclamation and scrap handling, the railroads have reduced the amount of reclaimable materials lost in shipments of scrap iron and steel from 35 per cent to 4 per cent, I. C. Bon, superintendent of scrap and reclamation on the Wabash, stated in an address to the Northwestern Carmen's Association in St. Paul, Minn., on April 5. Three kinds of reclamation were discussed; reclamation in which serviceable materials are found in shipments of scrap and returned to service; reclamation in which materials found in scrap are reconditioned for further use; and reclamation where materials found in scrap are used in making other materials. In contrast with conditions twenty-five years ago when salvaging methods were haphazard, it was pointed out that the work is now organized and conducted in a business-like way, with accurate cost finding methods, experienced personnel, and modern machinery and equipment.

The real value of reclamation to the railroads, the speaker stated, was brought to the front during the World War when the manufacture of war supplies reduced the available supply of railway materials. Reclamation proved a means of conserving the supply of materials required by the railroads and specialized methods were further promoted by surveys made in recent years, which disclosed duplications of machinery and tools in shops and a lack of co-ordination in their use, in-so-far as the manufacture of materials is concerned. It was Mr. Bon's opinion that reclamation has been vital to the railroads through the depression years and that it will continue to be an important branch of the railway business by providing a low-cost source of supply and an effective way to reduce waste.

Pennsylvania-Reading Seashore Lines Aid Fishermen

Careful preparations have been made by the Pennsylvania-Reading Seashore Lines to aid fishermen in their 1937 campaign, which traditionally opens on the first Sunday in May. The Seashore Lines' two crack fishing trains have been speeded up. "The Fishermen's Special" which operates to Schellenger's Landing in Cape May, N. J., and Cold Spring Harbor in Wildwood will make its nearly 90-mile run from Philadelphia in 100 minutes flat and "The Atlantic City Angler" will carry fishermen from Market Street Wharf, Philadelphia, to Atlantic City in 75 minutes.

As an added service, the facilities of the Fishermen's Information Bureau and the Visual Fishermen's Information Displays located in the main Philadelphia terminals will be made available. Originating last year, the fishing bureau is equipped to give fishermen an accurate picture of fishing conditions along the New Jersey coast and to make complete arrangements for fishing parties, ranging from 5 to 500.

Young Railroaders to Have Confab in Montreal

One hundred and fifty of Canada's most promising young railway men, equally divided between the Canadian Pacific Railway and Canadian National, will gather in Montreal for three days, June 11-13, for the third "conference of the younger men, Canadian railway lines," when they will discuss their problems with prominent railway officers and hear addresses given by nationally known business leaders. The two previous conferences were held at Montreal in 1928 and Winnipeg in 1930.

Chosen from across the two nation-wide

railway systems, the 150 young men will have "character in citizenship and leadership" as the theme of their conference in the Central Y. M. C. A. in Montreal where a program of "discussion, recreation, and good fellowship" awaits them. Before they come, they will be invited to submit questions concerning their work and social problems, and these will be answered during the course of the conference. While here they will be divided into groups of about ten, by occupations, and each group will be under the leadership of an officer of the boys' own department of railway work, as well as a Y. M. C. A. representative.

The main features of the meetings will be occupational and problem counseling, and addresses by outstanding men. In addition there will be tours of the city, games and swimming, "fellowship" luncheons and a banquet at the Windsor Hotel.

The conference has the support of both railways and every opportunity will be given the young men chosen to attend the conference. The chairman is A. J. Hills, chief of personnel, Canadian National, and the vice-chairman is H. J. Humphrey, vice-president and general manager, Eastern lines, Canadian Pacific.

A. A. R. Statement Criticizes Train-Length Bill

Characterizing the train-length bill which the Senate interstate commerce committee reported favorably this week, as "an ill-advised make-work measure which would inevitably fail of its purpose in the long run" the Association of American Railroads has issued a statement discussing the effect of the proposed legislation on the cost and safety of railroad operation. It is pointed out that no hearing was held on the present bill (S.69) which would limit the length of freight trains to 70 cars, although a footnote calls attention to the fact that train-length bills were introduced in the two previous sessions of Congress, and hearings on them were held before sub-committees of the Senate interstate commerce committee. None of these, however, was favorably reported.

Among the "many serious objections" to the bill, the A. A. R. believes that "the safety feature alone is enough to condemn it." It is put forward by proponents as a safety measure, yet under its provisions "it would become necessary to run 60,225,000 additional train miles each year" on the basis of 1936 traffic—with the result that:

1. Accidents, injuries and fatalities would be increased, particularly in connection with grade crossings.

2. Operating expenses would be increased about $90,000,000 per year on the basis of 1936 business.

3. Higher operating expenses would be reflected in higher freight rates.

4. Economical and efficient use of the existing railway plant and facilities would be impossible. Billions of dollars have been expended on track structures and equipment during the past 15 years to enable the railroads to employ modern operating methods, including the running of longer trains.

5. Additional main tracks, side tracks and yards would have to be constructed to accommodate the added train units, and lighter engines would have to be provided to avoid the wasteful use of existing engines designed to pull heavier trains.

N. Y. C. West Side Improvement Nearly Completed

The New York Central announces that the second stage of construction of its improvement on the west side of Manhattan Island (New York City) will be completed on June 28. The inauguration of service on that day of the new portion of the 13-mile construction which extends from Spuyten Duyvil to the Central's new St. John's Park Freight Terminal at Spring street, will mark the practical ending of railway operation on the surface of Eleventh avenue, except for a few switching movements daily to the Seventeenth street yard for perishable freight and to the New York Central stockyard at Forty-first street. The improvement as a whole will effect the removal of 105 grade crossings.

The section to be completed is a cut extending from Thirtieth to Sixtieth streets so depressed as to pass under 24 intersecting streets. Its construction necessitated the removal of approximately 600,000 cubic yards of soil and the demolition of about 200 buildings. Although it will be operated at first with only three tracks, provision has been made for the addition of other tracks later. Operation over this portion of the line will be by both Diesel locomotives and by electric locomotives served by a third rail system. It is expected that eventually all or most of the air rights over the cut will be utilized for the construction of commercial and industrial buildings.

The first stage of the improvement, an elevated structure over the streets from Thirtieth street to St. John's Park Freight Terminal, was dedicated June 28, 1934, and has been operated since that time by Diesel-electric locomotives.

Ball Sells Van Sweringen Properties

The Alleghany Corporation securities held by the Midamerica Corporation have been sold by the present owners, the George and Frances Ball Foundation, at a price as yet withheld, to Allen P. Kirby, a business man in Wilkes-Barre, Pa., and Robert R. Young and Frank F. Kolbe, partners of the New York Stock Exchange firm of Young, Kolbe & Company. As reported in the *Railway Age* of April 17, Mr. Ball had transferred the rail holdings and Cleveland real estate of Midamerica to the Ball Foundation on April 8. Continued interest in these properties through ownership of securities in certain subsidiaries of Midamerica will be held by Mr. Ball.

By this transaction, Messrs. Young, Kirby and Kolbe come into control of the 28,000 mile rail system, formerly controlled by O. P. and M. J. Van Sweringen. The new possessors of the "rail empire" declare their status as private investors for profit and expect to "subordinate all other considerations to the welfare of these properties should any other (of our) activities conflict." They have also stipulated their desire that the management of these rail properties be concentrated, as at present, in Cleveland, Ohio. Concerning the future status of Midamerica, the partners declared: "It is contemplated that in the near future the dissolution of Midamerica Corporation will be accomplished, to be followed at the earliest possible date with further steps in the simplification of corporate structures as rapidly as they can be accomplished without detriment to the hundreds of thousands of people directly and financially interested in the profitable operation of the Van Sweringen railroad enterprises to whom we are responsible."

Pennsy Resumes "Gipsy" Tours

Marking the opening of the second season of "Off the Beaten Track" railroad excursions, the initial trip of 1937 will be operated by the Pennsylvania from Philadelphia next Sunday, May 2, over a 255-mile scenic route through southeastern Pennsylvania and northeastern Maryland, C. H. Mathews, Jr., passenger traffic manager, announced this week. Touching Lancaster and Harrisburg, Pa., and Perryville, Md., the train will be routed as far as possible over little-used lines, including a 39 mile detour over the New Holland branch, and a ride over the picturesque Octoraro branch from Octoraro, Md., to Philadelphia.

Sales Meeting Held at Chicago

More than 1,000 passenger department and traffic representatives in Chicago attended a get-together meeting on April 26, sponsored by the Western and Eastern Passenger associations and held in that city on April 26. Because of the importance attached to the meeting, traffic officers from the Pacific and Atlantic coasts and the far South as well as those in Chicago, attended. The program was both instructive and entertaining. E. J. Gallmeyer, vice-president and general sales manager of the Wayne Pump Company, spoke on the subject "And the Difference is Salesmanship," the keynote of his speech being personality. His major recommendation was that ticket sellers smile when a customer approaches in such a way as to assure him that the salesman is glad he entered the office and wants him to return. Other educational features of the program were "Sales Skits" and a vocal film used by the Chicago & North Western in instructing its salesmen. Of the sales skits, one depicted proper conduct in answering telephone inquiries, another showed how a solicitor, after three calls and an effort to interest a man's wife, finally prevailed on him to use railroad service instead of his automobile, which he had used exclusively in traveling, while the third showed how an agent in a ticket office can sell more transportation and satisfy customers. The North Western's vocal sound film demonstrated how an agent in a small town can build up his business by employing a little common sense and effort. The entertainment included a broadcast of a "railroad crossing derby," in burlesque form, by Quinn Ryan, manager of WGN Broadcasting Station, humorous lines by

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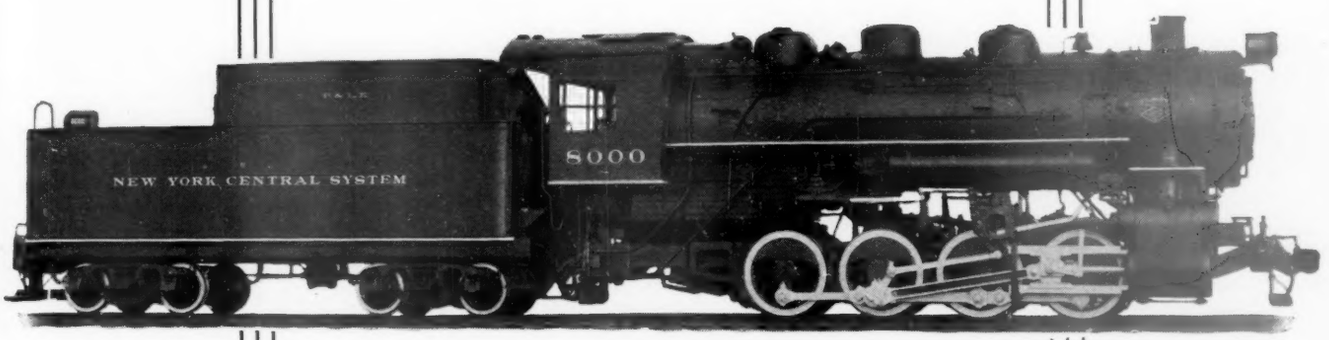
Built by Lima



FOR THE

NEW YORK CENTRAL SYSTEM

FIFTY of the above locomotives are being built by Lima Locomotive Works, Incorporated, for the Pittsburgh & Lake Erie Railroad Company. » » » With expanding traffic the yards often become the "bottleneck" of operations. Modern switchers are needed to handle expeditiously the heavier loads brought in by modern Super-Power road engines. » » » Railroads with progressive motive power policies include new switchers in their modernization programs.

LIMA LOCOMOTIVE WORKS, LIMA LOCOMOTIVE WORKS INCORPORATED INCORPORATED, LIMA, OHIO

Jess Kirkpatrick, songs by the "Three Graces" of the same station and music by a double quartet of the Railway Express Agency.

B. & M. and M. C. Win New England Award

The Boston & Maine and the Maine Central are the recipients of the railroad leadership award given by the "Boston Herald," it is announced in the employees' magazine of the former road. The decision is based upon the service which the roads have rendered New England and especially upon their "pioneer" work in rail-air-bus co-ordination, introduction of the "Flying Yankee," snow trains and bicycle trains, inception of a storedoor pick-up and delivery system, and the erection of the sports-area in the Boston terminal.

Motor Carrier Contracts Must Be in Writing

Contracts or agreements executed by contract motor carriers must hereafter be in writing, according to an order of the Interstate Commerce Commission, Division 5, which also prescribes other requirements with respect to such arrangements. The majority report by Commissioners Eastman and Caskie, to which Commissioner Lee dissented, found that "for the future the said contracts or agreements shall be in writing, shall provide for transportation for a particular shipper or shippers, shall be bilateral and impose specific obligations upon both carrier and shipper or shippers, shall cover a series of shipments during a stated period of time in contrast to contracts of carriage governing individual shipments, and copies of which shall be preserved by the carriers parties thereto so long as said contracts or agreements are in force and for at least one year thereafter."

The report after a preliminary discussion of the nature of the contract-carrier function and the commission's regulatory authority in the premises points out how a practical application of the latter is necessary if the act's underlying purpose of promoting and protecting adequate common carrier service by motor vehicle is to be carried out. The contract carrier's ability to give "a higher type of special and personal service," it says, becomes "a positive peril" to common carriers "when competitors, claiming to be contract carriers, are promiscuous in their dealings with shippers, shop around among them freely, and confine their actual contracts to individual shipments." This situation tends to intensify "unfair and destructive" competition; it sets up conditions ultimately detrimental to both carriers and the public; and impedes "the practical administration of the act" by making it difficult "to locate the line of distinction between those who are common carriers and those who are contract carriers." As a matter of law, the report adds, "it is more than probable that many of those who now profess to be contract carriers are in reality common carriers."

Next comes a discussion of the possibility of employing the minimum rate power to correct the situation which is called "deplorable"; but that device is passed over in favor of the "broad power to prescribe rules, regulations and procedure." The latter, it is conceded, "is not unlimited," but it is nevertheless contended that it permits "requirements which are not inconsistent with the legal character of such carriers under the act, which will be of aid in its practical administration, and which are in furtherance of its underlying purpose to promote and protect adequate and efficient common carrier service by motor vehicle in the public interest."

The majority report concludes with a discussion of the requirements which it imposes, calling them "simple" and such as "can readily be obeyed." They will, in the judgment of the majority, "remove many present hindrances to the practical and effective administration of the act," while at the same time they "will not stand in the way of proper and desirable contract carriage."

Commissioner Lee, in his dissenting opinion, contends that the conditions imposed have the effect of taking from contract carriers "the right to enter into types of contracts authorized by the act." He prefers to "follow the procedure provided by the Congress and to remove any undue disadvantage of the common carriers by increasing the minimum charges of contract carriers to the extent necessary to preserve the proper balance between the two classes of carriers."

1936 Robbery Claims Lowest on Record

Claims paid in 1936 by the railroads of the United States and Canada as a result of robbery of freight in transit amounted to $688,792, the smallest amount on record for any one year, according to the Association of American Railroads. This was an average of 1.8 cents for each car loaded.

Robbery claims paid in 1936 were 18 per cent less than those paid in 1935. Credit for the decrease, the statement says, goes largely to "the efficient police organizations which have been established by the railroads and the vigilance of those organizations in guarding the billions of dollars worth of freight transported annually over the rail lines."

"The guarding of freight shipments," it continues, "is far more hazardous than police work in cities and other communities. This is true not only because the gangs which set out to steal freight are well organized, but also because these robberies usually take place in isolated localities where it is difficult for a railroad policeman to summon help. This accounts for the fact that the 'honor roll' maintained by the Protective Section of the Association of American Railroads is frequently enlarged with the names of police officers who lose their lives in the performance of duty."

Practically every freight train that departs from the larger terminals is guarded by police officers. On trains known to carry a valuable cargo, railway police maintain their vigil over such shipments until they reach their destination. When valuable cargoes such as, for instance, whiskey, cigarettes and other tobacco products, and woolens, are to be transported, the police departments of the railroads handling such shipments are notified in advance and a sufficient number of police officers are detailed to guard the shipment from point of origin to destination. Although great quantities of whiskey are transported over the railroads, not a "highjacking" case has been reported in connection with those shipments since the repeal of prohibition.

Of the total amount of freight claims paid last year because of robbery, more than one-third resulted from the theft of coal and coke. In most instances the fuel was stolen by persons to provide heat for their homes. There have been numerous cases, however, where organized gangs have stolen fuel from loaded freight cars in order to resell it. Next to coal and coke, freight claims resulting from theft of manufactured tobacco products rank second, the railroads in 1936 having paid claims resulting from that cause amounting to nearly $125,000.

Explosives Bureau Annual Report

The annual report for 1936 of the chief inspector of the "Bureau for the Safe Transportation of Explosive & Other Dangerous Articles" (W. S. Topping, chief inspector) has recently been issued. The record reveals that in 1936 and for the past ten years there was no explosion, no person killed and no person injured, either in Canada or the United States, in the handling of dangerous explosives. During the year four deaths occurred in the handling of tank cars of gasoline, two of which were due to ignition of leakage from defective outlet valves, the third attributable to the negligence of a consignee's employee in unloading, and the last out of railroad jurisdiction.

Mr. Topping is especially concerned with the increase in breakage of packed explosives. Due to the work of a special inspector in experimentation with actual conditions of loading and transportation, the Bureau was able to determine that, while the increased speed of freight trains in road and yard movement has increased the breakages reported, nevertheless they are due in large measure to faulty loading and bracing in cars by shippers and the use of light weight wooden boxes. The inspector suggests that the explosives industry consider the use of "one-half inch all around lock covered boxes" for high explosives. After listing the main causes of breakage, the report points out that indifference to regulations is the largest single contributor, since it has been found that cars carrying impact recorders "invariably" go through to destination without breakage.

Complete tables for reported accidents appear, one listing those involving explosives proper and the other dealing with cases involving the so-called other dangerous articles not including explosives, fireworks, etc. The latter reveals a slightly higher total for 1936 over 1935. It also indicates that wrecks and derailments continue to be the chief sources of loss, which amounts to $485,007.

The staff of the Bureau, which comprises 21 district inspectors, one test and specification inspector and one special inspector, made 24,686 routine inspections, 777 more

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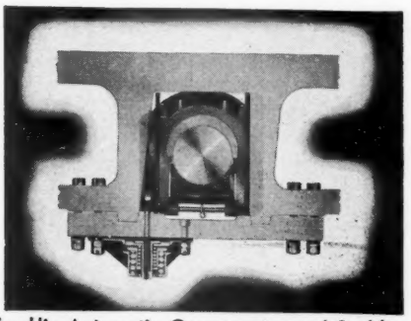
• MORE MILEAGE

• BETTER SERVICE

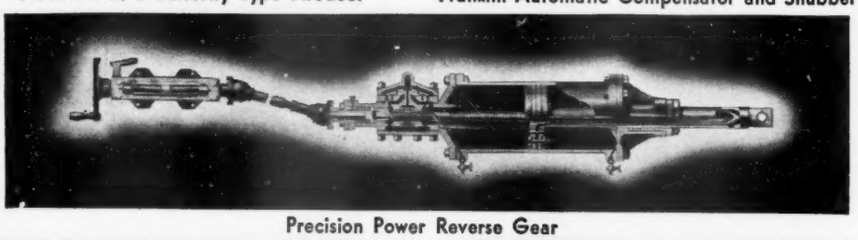
• LONGER LIFE

• LOWER COSTS

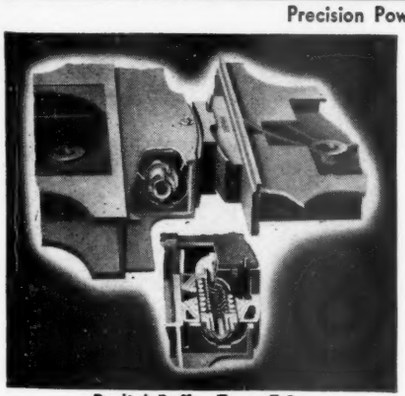
Franklin No. 8 Butterfly Type Firedoor



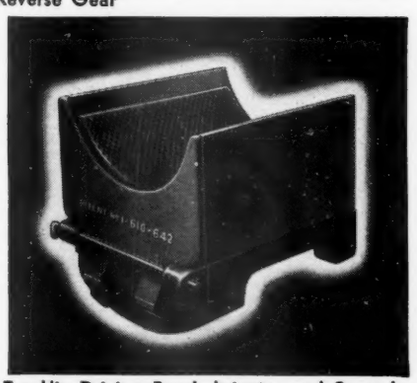
Franklin Automatic Compensator and Snubber



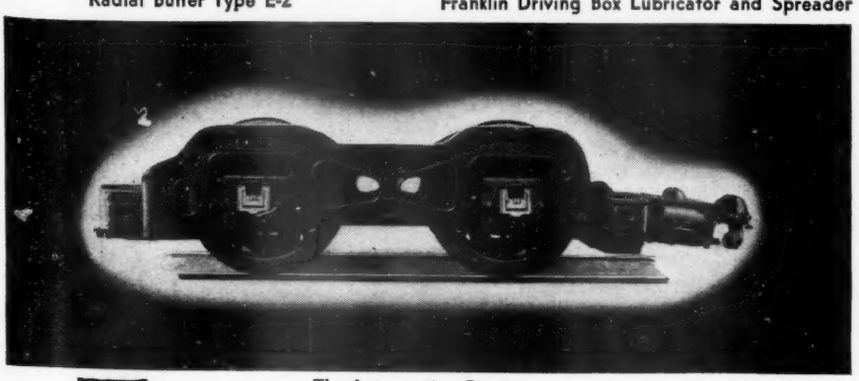
Precision Power Reverse Gear



Radial Buffer Type E-2



Franklin Driving Box Lubricator and Spreader



The Locomotive Booster

All these factors are built into Franklin Replacement Parts for Franklin Devices. » » » Replacement Parts are of major importance because they take the brunt of the service. » » » Into every Franklin Part is built the experience gained in the development of the device itself. » » » Only by duplicating this development work can this experience, essential to the making of duplicate parts, be gained. » » » Only by using genuine Franklin Replacement Parts for Franklin Devices can the same dependable performance and the same economy as given by the original part be obtained. » » » » » » » » »

FRANKLIN RAILWAY SUPPLY COMPANY, INC.

NEW YORK CHICAGO MONTREAL

than were made in 1935. It is also recorded that the organization presented a total of 141 lectures on the subject of safe transportation of dangerous commodities.

Concerning truck regulation, the report states that up to the present time no steps have been taken for the enforcement of the regulations prepared by the Bureau and prescribed by the Interstate Commerce Commission, effective March, 1935, applying to all common carriers transporting explosives or other dangerous articles. The report states that "the lack of any enforcement of these regulations tends to create not only a dangerous situation, but discriminates against the rail carriers who do enforce the rail rules. Not all shippers take advantage of the situation, but numbers do fail to pack and mark their dangerous shipments as required by the truck rules, which are in accord with rail rules."

Exhibitors at June Conventions

Thus far 241 companies have applied for space at the exhibit to be held by the Railway Supply Manufacturers' Association at the Atlantic City conventions of the Mechanical Division and the Purchases and Stores Division of the Association of American Railroads. The Mechanical Division will consider locomotive subjects on June 16, 17 and 18, and car problems on June 21, 22 and 23. The Purchases and Stores Division will meet on June 21, 22 and 23. The Association of Railway Electrical Engineers will hold a one-day meeting on Thursday, June 17, and the Air Brake Association will meet on June 17 and 18. The exhibit will be held in the Atlantic City Auditorium and track exhibits will be located near the railroad station. Secretary John D. Conway of the Railway Supply Manufacturers' Association, Oliver Building, Pittsburgh, Pa., is still receiving inquiries for exhibit space.

The following is a list of exhibitors to whom space has thus far been allotted:

Adams & Westlake Co., The, Elkhart, Ind.
Air Reduction Sales Co., New York.
Ajax Hand Brake Co., New York.
Aluminum Co. of America, Pittsburgh, Pa.
American Arch Co., Inc., New York.
American Brake Shoe & Foundry Co., The, New York.
American Car & Foundry Co., New York.
American Locomotive Co., New York.
American Rolling Mill Co., The, Middletown, O.
American Steel Foundries, Chicago.
American Throttle Co., Inc., New York.
Anchor Packing Co., The, Philadelphia, Pa.
Apex Tool & Cutter Co., Inc., The, Shelton, Conn.
Ardco Manufacturing Co., Hoboken, N. J.
Ashton Valve Co., The, Boston, Mass.
Association of Mfrs. of Chilled Car Wheels, Chicago.
Automatic Transportation Co., Chicago.

Badeker Manufacturing Co., Chicago.
Baker-Raulang Co., The, Cleveland, O.
Baldwin Locomotive Works, The, Philadelphia, Pa.
Barco Manufacturing Co., Chicago.
Bendix-Westinghouse Auto. Air Brake Co., Pittsburgh, Pa.
Bettendorf Co., The, Bettendorf, Ia.
Bethlehem Steel Co., Bethlehem, Pa.
Bird-Archer Co., Ltd., The, Montreal, Que.
Birdsboro Steel Foundry & Machine Co., Birdsboro, Pa.
Black & Decker Manufacturing Co., Towson, Md.
Blaw-Knox Co., Blawnox, Pa.
Blumenthal, Sidney & Co., New York.
Buckeye Steel Castings Co., The, Columbus, O.
Buda Co., The, Harvey, Ill.
Budd Manufacturing Co., Edward G., Philadelphia, Pa.
Buffalo Brake Beam Co., New York.
Bullard Co., The, Bridgeport, Conn.
Burgess Battery Co., Chicago.
By-Products Steel Co., Coatesville, Pa.

Camel Co. (Youngstown Steel Door), Chicago.
Cardwell Westinghouse Co., Chicago.
Celotex Corp., The, Chicago.
Champion Brake Corp., Chicago.
Chase & Co., Inc., L. C., New York.
Chicago-Hutchins Corp., Chicago.
Chicago Pneumatic Tool Co., New York.
Chicago Railway Equipment Co., Chicago.
Cincinnati Shaper Co., The, Cincinnati, O.
Clark Manufacturing Co., The, Bird Haven, Va.
Clark Trucktractor Co., Battle Creek, Mich.
Cleveland Tanning Co., Cleveland, O.
Coach & Car Equipment Co., Chicago.
Cohn, Jr., Co., The J. S., Englewood, N. J.
Cotting Hoist Co., Danville, Ill.
Consolidated Ashcroft Hancock Co., Inc., New York.
Consolidated Machine Tool Corp., Rochester, N. Y.
Continental Paint & Varnish Co., Chicago.
Coppus Locomotive Equipment Co., Worcester, Mass.
Corley Co., The, Jersey City, N. J.
Crane Co., Chicago.
Crucible Steel Co. of America, New York.

Dampney Co. of America, Hyde Park, Boston.
Davis Brake Beam Co., Johnstown, Pa.
Dayton Rubber Mfg. Co., The, Dayton, O.
Dearborn Chemical Co., Chicago.
Detroit Lubricator Co., Detroit, Mich.
Dick, A. B., Co., Chicago.
Dri-Steam Valve Sales Corp., New York.
Duff-Norton Manufacturing Co., The, Pittsburgh, Pa.
Dunlop Tire & Rubber Co., Buffalo, N. Y.
Duryea, O. C., Corp., New York.
Du-Wel Steel Products Co., Chicago.
Durametallic Corp., Kalamazoo, Mich.

Eaton Manufacturing Co., Massillon, O.
Edgewater Steel Co., Pittsburgh, Pa.
Edison, Thomas A., Inc., West Orange, N. J.
Edna Brass Manufacturing Co., The, Cincinnati, O.
Edson Corp., The, South Boston, Mass.
Electric Service Supplies Co., Philadelphia, Pa.
Electric Storage Battery Co., The, Philadelphia, Pa.
Electro-Chemical Engineering Corp., Chicago.
Elwell-Parker Electric Co., Cleveland, O.
Enterprise Railway Equipment Co., Chicago, Ill.
Ewald Iron Company, Louisville, Ky.

Fabreeka Products Co., Inc., Boston, Mass.
Fafnir Bearing Co., The, New Britain, Conn.
Falls Hollow Staybolt Co., Cuyahoga Falls, O.
Flannery Bolt Co., Bridgeville, Pa.
Ford, The J. B., Sales Co., Wyandotte, Mich.
Fort Pitt Malleable Iron Co., Pittsburgh, Pa.
Franklin Railway Supply Co., Inc., New York.
Frost Railway Supply Co., The, Detroit, Mich.

Galena Oil Corp. (Valvoline Oil Co.), Cincinnati, O.
Garlock Packing Co., The, Palmyra, N. Y.
General Electric Co., Schenectady, N. Y.
General Machinery Corp., Hamilton, O.
General Steel Castings Corp., Granite City, Ill.
George Manufacturing Co., Inc., Philadelphia, Pa.
Gilg, Henry F., N. S., Pittsburgh, Pa.
Globe Steel Tubes Co., Milwaukee, Wis.
Gold Car Heating & Lighting Co., Brooklyn, N. Y.
Gould Storage Battery Corp., Depew, N. Y.
Graham-White Sander Corp., Roanoke, Va.
Gregg Co., Inc., The, Philadelphia, Pa.
Grip Nut Co., Chicago.
Gustin-Bacon Manufacturing Co., Kansas City, Mo.

Hanna Stoker Co., The, Cincinnati, O.
Harnischfeger Corp., Milwaukee, Wis.
Heywood-Wakefield Co., Gardner, Mass.
Holland Co., Chicago.
Hollup Corp., Chicago.
Hulson Grate Corp., Keokuk, Ia.
Hunt-Spiller Manufacturing Corp., So. Boston, Mass.
Huron Manufacturing Co., Detroit, Mich.
Hyatt Bearings Div., General Motors Corp., Newark, N. J.

Illinois Railway Equipment Co., Chicago.
Independent Pneumatic Tool Co., Chicago.
Ingersoll-Rand Co., New York.
International Nickel Co., Inc., The, New York.

Jenkins Co., George O., Bridgewater, Mass.
Johns-Manville Sales Corp., New York.
Jones & Laughlin Steel Corp., Pittsburgh, Pa.
Journal Box Servicing Corp., Indianapolis, Ind.
Joyce-Cridland Co., The, Dayton, O.

Karpen & Bros., S., Chicago.
Koppers Co., The, Pittsburgh, Pa.

Landis Machine Co., Waynesboro, Pa.
Lebanon Steel Foundry, Lebanon, Pa.
Lenon Co., The, Chicago.
Lewis Bolt & Nut Co., Minneapolis, Minn.
Lima Locomotive Works, Inc., New York.
Lincoln Electric Railway Sales Co., The, Cleveland, O.
Locomotive Finished Material Co., The, Atchison, Kan.
Locomotive Firebox Co., Chicago.
Lukens Steel Co., Coatesville, Pa.
Lukenweld, Inc., Coatesville, Pa.
Lunkenheimer Co., The, Cincinnati, O.

McCabe Manufacturing Co., Lawrence, Mass.
McConway & Torley Corp., Pittsburgh, Pa.
MacLean-Fogg Lock Nut Company, Chicago.
Magnaflux Corp., Chicago.
Magnus Metal Corp., Chicago.
Mandel Brothers, Chicago.
Manganese Steel Forge Co., Philadelphia, Pa.
Massachusetts Mohair Plush Co., New York.
Mercury Manufacturing Co., Chicago.
Midland Co., The, So. Milwaukee, Wis.
Midvale Co., The, Nicetown, Pa.
Milar & Co., Chicago.
Miner, W. H., Inc., Chicago.
Morganite Brush Co., Inc., Long Island City, N. Y.
Morton Manufacturing Co., Muskegon Hgts., Mich.
Motor Wheel Corp., Lansing, Mich.

Nathan Manufacturing Co., New York.
National Aluminate Corp., Chicago.
National Bearing Metals Corp., St. Louis, Mo.
National Brake Co., Inc., Buffalo, N. Y.
National Lock Washer Co., The, Newark, N. J.
National Malleable & Steel Castings Co., Cleveland, O.
New York Air Brake Co., The, New York.
Nickel-Chromium Plating Corp., Chicago.
Nicol Corp., George A., New York.

Oakite Products, Inc., New York.
Ohio Brass Co., Mansfield, O.
Ohio Injector Co. of Illinois, Chicago.
Okadee Co., The, Chicago.
Okonite Co., The, New York.
Oxweld Railroad Service Co., The, New York.

Paige-Jones Chemical Co., Div. National Aluminate Corp., Chicago.
Pantasote Co., The, New York.
Parker-Kalon Corp., New York.
Paxton-Mitchell Co., Omaha, Nebr.
Peerless Equipment Co., Chicago.
Penn Iron & Steel Co., Creighton, Pa.
Pilliod Company, The, New York.
Pocket List of Railroad Officials, New York.
Prime Manufacturing Co., The, Milwaukee, Wis.
Pullman-Standard Car Mfg. Co., Chicago.
Pyle-National Co., The, Chicago.
Pyrene Manufacturing Co., Newark, N. J.

Railway Business Association, Chicago.
Railway Devices Co., St. Louis, Mo.
Railway Purchases & Stores, Chicago.
Railway Service & Supply Corp., Indianapolis, Ind.
Ralston Steel Car Co., The, Columbus, O.
Reliance Machine & Stamping Works, New Orleans, La.
Republic Steel Corp., Cleveland, O.
Ryerson & Son, Joseph T., Chicago.

S K F Industries, Philadelphia, Pa.
Safety Car Heating & Lighting Co., New Haven, Conn.
St. Louis Car Co., St. Louis, Mo.
Schaefer Equipment Co., Pittsburgh, Pa.
Scullin Steel Co., St. Louis, Mo.
Sellers, William & Co., Inc., Philadelphia, Pa.
Sherman-Williams Co., The, Cleveland, O.
Simmons-Boardman Publishing Corp., New York.
Silent Hoist Winch & Crane Co., Columbus, O.
Sinkler, Inc., Joseph, Chicago.
Spring Packing Corp., Chicago.
Standard Car Truck Co., Chicago.
Standard Railway Equipment Co., Chicago.
Standard Stoker Co., Inc., The, New York.
Stucki, A., Co., Pittsburgh, Pa.
Superheater Co., The, New York.
Superior Hand Brake Co., Chicago.
Superior Railway Products Corp., Pittsburgh, Pa.
Symington-Gould Corp., The, New York.

T-Z Railway Equipment Co., Chicago.
Talmage Manufacturing Co., The, Cleveland, O.
Templeton, Kenly & Co., Chicago.
Texas Company, The, New York.
Timken Roller Bearing Co., The, Canton, O.
Tuco Products Corp., New York.

Ulster Iron Works, New York.
Underwood Corp., H. B., Philadelphia, Pa.
Union Asbestos & Rubber Co., Chicago.
Union Metal Products Co., Chicago.
Union Railway Equipment Co., Chicago.
Union Spring & Manufacturing Co., New Kensington, Pa.
Union Switch & Signal Co., Swissvale, Pa.
Unitcast Co., The, Toledo, O.
United States Metallic Packing Co., Philadelphia, Pa.

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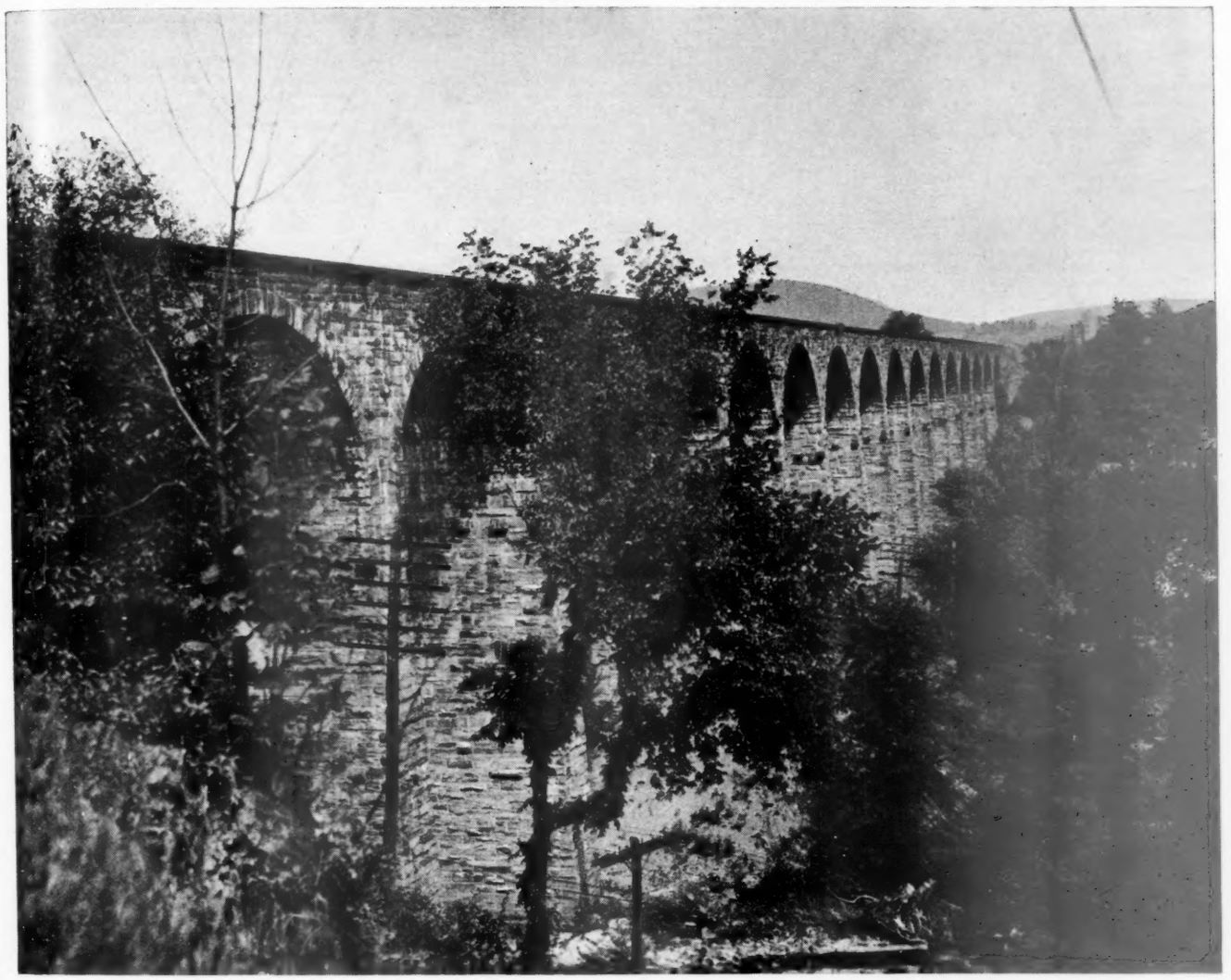
NO. 13 OF A SERIES OF FAMOUS ARCHES OF THE WORLD



STARRUCCA VALLEY VIADUCT

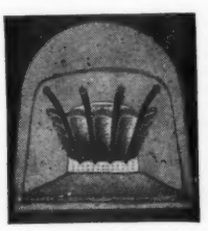
One of the early marvels of bridge engineering in the United States is the Starrucca Valley Viaduct of the Erie Railroad, constructed in 1848 at Lanesboro, Penna., near Susquehanna. This multiple arch span of stone masonry extends for 1200 ft. and rises 110 ft. above the floor of the valley. » » » The Security Sectional Arch is as great a step forward in railroad economy as were the first viaducts that carried trains over rivers and gorges, for only with the carefully engineered Security Sectional Arch can the locomotive realize its fullest capacity and utilize its potential power.

* * *

THERE'S MORE TO SECURITY ARCHES THAN JUST BRICK

HARBISON-WALKER REFRACTORIES CO.

Refractory Specialists



AMERICAN ARCH CO.
INCORPORATED

Locomotive Combustion Specialists » » »

United States Steel Corp. and Subsidiaries, Pittsburgh, Pa.
Universal Draft Gear Attachment, Chicago.

Valve Pilot Corp., New York.
Vanadium Corp. of America, New York.
Vapor Car Heating Co., Inc., Chicago.
Vermilion Malleable Iron Co., Chicago.
Viloco Railway Equipment Co., Chicago.

Walworth Co., New York.
Waukesha Motor Co., Waukesha, Wis.
Waugh Equipment Co., New York.
West Disinfecting Co., Long Island City, N. Y.
Western Railway Equipment Co., St. Louis, Mo.
Westinghouse Air Brake Co., Wilmerding, Pa.
Westinghouse Elec. & Mfg. Co., E. Pittsburgh, Pa.
Whiting Corp., Harvey, Ill.
Willson Products, Inc., Reading, Pa.
Wilson Engineering Corp., Chicago.
Wine Railway Appliance Co., The, Toledo, O.
Worthington Pump & Machinery Corp., Harrison, N. J.

Yale & Towne Mfg. Co., The, Philadelphia, Pa.
Yale & Towne Mfg. Co., The, Stamford, Conn.
Youngstown Steel Door Co., Youngstown, O.

Meetings and Conventions

The following list gives names of secretaries, date of next or regular meetings, and places of meetings:

AIR BRAKE ASSOCIATION.—T. L. Burton, Room 1440, 466 Lexington Ave., New York, N. Y. Next meeting, June 17-18, 1937, Haddon Hall, Atlantic City, N. J.

ALLIED RAILWAY SUPPLY ASSOCIATION.—F. W. Venton, Crane Company, 836 S. Michigan Ave., Chicago, Ill. To meet with Air Brake Association, Car Department Officers' Association, International Railway Master Blacksmiths' Association, International Railway General Foremen's Association, Master Boiler Makers' Association, and the Railway Fuel and Traveling Engineers' Association. Exhibit, September 28-30, 1937, Hotel Sherman, Chicago, Ill.

AMERICAN ASSOCIATION OF FREIGHT TRAFFIC OFFICERS.—W. R. Curtis, F. T. R., M. & O. R. R., Chicago, Ill.

AMERICAN ASSOCIATION OF GENERAL BAGGAGE AGENTS.—E. L. Duncan, 816 McCormick Bldg., Chicago, Ill. Annual meeting, September, 1937, Boston, Mass.

AMERICAN ASSOCIATION OF PASSENGER TRAFFIC OFFICERS.—W. C. Hope, C. R. R. of N. J., 143 Liberty St., New York, N. Y. Annual meeting, November 8-9, 1937, Miami, Fla.

AMERICAN ASSOCIATION OF RAILROAD SUPERINTENDENTS.—F. O. Whiteman, Union Station, St. Louis, Mo. Annual meeting, June 8-10, 1937, Palmer House, Chicago, Ill.

AMERICAN ASSOCIATION OF RAILWAY ADVERTISING AGENTS.—E. A. Abbott, Poole Bros., Inc., 85 W. Harrison St., Chicago, Ill.

AMERICAN ASSOCIATION OF SUPERINTENDENTS OF DINING CARS.—F. R. Borger, C. I. & L. Ry., 836 S. Federal St., Chicago, Ill. Annual meeting, October 11-13, 1937, Mayflower Hotel, Washington, D. C.

AMERICAN RAILWAY BRIDGE AND BUILDING ASSOCIATION.—C. A. Lichty, 319 N. Waller Ave., Chicago, Ill. Annual meeting, October 19-21, 1937, Hotel Stevens, Chicago, Ill. Exhibit by Bridge and Building Supply Men's Association.

AMERICAN RAILWAY CAR INSTITUTE.—W. C. Tabbert, 19 Rector St., New York, N. Y.

AMERICAN RAILWAY DEVELOPMENT ASSOCIATION.—E. J. Hoddy, Louisville & Nashville R. R., Louisville, Ky.

AMERICAN RAILWAY ENGINEERING ASSOCIATION.—Works in co-operation with the Association of American Railroads, Division IV.—E. H. Fritch, 59 E. Van Buren St., Chicago, Ill. Annual meeting, March 15-17, 1938.

AMERICAN RAILWAY MAGAZINE EDITORS' ASSOCIATION.—M. W. Jones, Baltimore & Ohio R. R., Mt. Royal Station, Baltimore, Md. Spring meeting, May 7-8, 1937, Book-Cadillac Hotel, Detroit, Mich.

AMERICAN RAILWAY TOOL FOREMEN'S ASSOCIATION.—G. G. Macina, C., M., St. P. & P. R. R., 11402 Calumet Ave., Chicago, Ill.

AMERICAN SHORT LINE RAILROAD ASSOCIATION.—R. E. Schindler, Union Trust Bldg., Washington, D. C. Annual meeting, October 18-19, 1937, Chicago, Ill.

AMERICAN SOCIETY OF MECHANICAL ENGINEERS.—C. E. Davies, 29 West 39th St., New York, N. Y. Semi-annual meeting, May 17-21, 1937, Hotel Statler, Detroit, Mich.
Railroad Division.—Marion B. Richardson, 21 Hazel Ave., Livingston, N. J.

AMERICAN TRANSIT ASSOCIATION.—Guy C. Hecker, 292 Madison Ave., New York, N. Y.

AMERICAN WOOD PRESERVERS' ASSOCIATION.—H. L. Dawson, 1427 Eye St., N. W., Washington, D. C. Annual meeting January 25-27, 1938, Chicago, Ill.

ASSOCIATION OF AMERICAN RAILROADS.—H. J. Forster, Transportation Bldg., Washington, D. C.
Operations and Maintenance Department.—J. M. Symes, Vice-President, Transportation Bldg., Washington, D. C.
Operating-Transportation Div. — L. R. Knott, 59 E. Van Buren St., Chicago, Ill. Annual meeting, May 19-20, 1937, Hotel Stevens, Chicago, Ill.
Freight Station Section.—R. O. Wells, 59 E. Van Buren St., Chicago, Ill.
Medical and Surgical Section.—J. C. Caviston, 30 Vesey St., New York, N. Y. Annual meeting, June 7-8, 1937, Hotel Traymore, Atlantic City, N. J.
Protective Section.—J. C. Caviston, 30 Vesey St., New York, N. Y. Annual meeting, May 26-27, 1937, Hotel Cleveland, Cleveland, Ohio.
Safety Section.—J. C. Caviston, 30 Vesey St., New York, N. Y. Annual meeting, May 11-13, 1937, Hotel Statler, St. Louis, Mo.
Telegraph and Telephone Section.—W. A. Fairbanks, 30 Vesey St., New York, N. Y. Annual meeting, Oct. 5-7, 1937, Medinah Club, Chicago, Ill.
Division IV.—Engineering.—E. H. Fritch, 59 E. Van Buren St., Chicago, Ill. Annual meeting, March 15-17, 1938.
Construction and Maintenance Section.—E. H. Fritch, 59 E. Van Buren St., Chicago, Ill. Annual meeting, March 15-17, 1938.
Electrical Section.—E. H. Fritch, 59 E. Van Buren St., Chicago, Ill.
Signal Section.—R. H. C. Balliet, 30 Vesey St., New York, N. Y.
Division V.—Mechanical.—V. R. Hawthorne, 59 E. Van Buren St., Chicago, Ill. Annual meeting, June 16-23, 1937, Atlantic City, N. J. Exhibit by Railway Supply Manufacturers' Association.
Division VI.—Purchases and Stores.—W. J. Farrell, 30 Vesey St., New York, N. Y. Annual meeting, June 21-23, 1937, Atlantic City, N. J. Exhibit by Railway Supply Manufacturers Association.
Division VII.—Freight Claims.—Lewis Pilcher, 59 E. Van Buren St., Chicago, Ill. Annual meeting, June 15-17, 1937, Royal York Hotel, Toronto, Ontario, Canada.
Division VIII.—Motor Transport.—George M. Campbell, Transportation Bldg., Washington, D. C.
Car-Service Division.—C. A. Buch, Transportation Bldg., Washington, D. C.
Finance, Accounting, Taxation and Valuation Department.—E. H. Bunnell, Vice-President, Transportation Bldg., Washington, D. C.
Accounting Division.—E. R. Ford, Transportation Bldg., Washington, D. C. Annual meeting, June 2-4, 1937, Hotel Traymore, Atlantic City, N. J.
Treasury Division.—E. R. Ford, Transportation Bldg., Washington, D. C.
Traffic Department.—A. F. Cleveland, Vice-President, Transportation Bldg., Washington, D. C.

ASSOCIATION OF RAILWAY CLAIM AGENTS.—F. L. Johnson, Claim Agent, Alton R. R., 340 W. Harrison St., Chicago, Ill. Annual meeting, May 26-28, 1937, Netherland Plaza Hotel, Cincinnati, Ohio.

ASSOCIATION OF RAILWAY ELECTRICAL ENGINEERS.—Jos. A. Andreucetti, C. & N. W. Ry., 1519 Daily News Bldg., 400 W. Madison St., Chicago, Ill. Semi-annual meeting, June 17, 1937, Chelsea Hotel, Atlantic City, N. J. Annual meeting, October, 1937, Hotel Sherman, Chicago, Ill. Exhibit by Railway Electrical Supply Manufacturers' Association.

BRIDGE AND BUILDING SUPPLY MEN'S ASSOCIATION.—W. S. Carlisle, National Lead Company, 900 W. 18th St., Chicago, Ill. Meets with American Railway Bridge and Building Association.

CANADIAN RAILWAY CLUB.—C. R. Crook, 2271 Wilson Ave., N. D. G., Montreal, Que. Regular meetings, second Monday of each month, except June, July and August, Windsor Hotel, Montreal, Que.

CAR DEPARTMENT OFFICERS' ASSOCIATION.—A. S. Sternberg, M. C. B. Belt Ry. of Chicago, 7926 S. Morgan St., Chicago, Ill.

CAR FOREMEN'S ASSOCIATION OF CHICAGO.—G. K. Oliver, 2514 W. 55th St., Chicago, Ill. Regular meetings, second Monday of each month, except June, July and August, La Salle Hotel, Chicago, Ill.

CAR FOREMEN'S ASSOCIATION OF ST. LOUIS, MO.—E. G. Bishop, Illinois Central System, East St. Louis, Ill. Regular meetings, third Tuesday of each month except June, July and August, Hotel Statler, St. Louis, Mo.

CENTRAL RAILWAY CLUB OF BUFFALO.—Mrs. M. D. Reed, 1817 Hotel Statler, McKinley Square, Buffalo, N. Y. Regular meetings, second Thursday of each month except June, July and August, Hotel Statler, Buffalo, N. Y.

INTERNATIONAL RAILWAY FUEL ASSOCIATION.—(See Railway Fuel and Traveling Engineers' Association.)

INTERNATIONAL RAILWAY GENERAL FOREMEN'S ASSOCIATION.—Wm. Hall, 1061 W. Wabasha St., Winona, Minn. Annual meeting, September 28-29, 1937, Hotel Sherman, Chicago, Ill.

INTERNATIONAL RAILWAY MASTER BLACKSMITHS' ASSOCIATION.—W. J. Mayer, Michigan Central R. R., Detroit, Mich.

MASTER BOILER MAKERS' ASSOCIATION.—A. F. Stiglmeier, 29 Parkwood St., Albany, N. Y. Annual meeting, September 29-30, 1937, Hotel Sherman, Chicago, Ill.

NATIONAL ASSOCIATION OF RAILROAD AND UTILITIES COMMISSIONERS.—Clyde S. Bailey, 806-808, 13th and E Sts., N. W., Washington, D. C. Annual meeting, August 31-September 3, 1937, Salt Lake City, Utah.

NATIONAL RAILWAY APPLIANCES ASSOCIATION.—C. H. White, Room 1826, 208 S. La Salle St., Chicago, Ill.

NEW ENGLAND RAILROAD CLUB.—W. E. Cade, Jr., 683 Atlantic Ave., Boston, Mass. Regular meetings, second Tuesday of each month, except June, July, August and September, Hotel Touraine, Boston, Mass.

NEW YORK RAILROAD CLUB.—D. W. Pye, 30 Church St., New York, N. Y. Regular meetings, third Friday of each month, except June, July and August, 29 W. 39th St., New York, N. Y.

PACIFIC RAILWAY CLUB.—William S. Wollner, P. O. Box 3275, San Francisco, Cal. Regular meetings, second Thursday of each month, alternately at San Francisco and Oakland, excepting June at Los Angeles and October at Sacramento.

RAILWAY BUSINESS ASSOCIATION.—P. H. Middleton, First National Bank Bldg., Chicago, Ill.

RAILWAY CLUB OF PITTSBURGH.—J. D. Conway, 1941 Oliver Bldg., Pittsburgh, Pa. Regular meetings, fourth Thursday of each month, except June, July and August, Fort Pitt Hotel, Pittsburgh, Pa.

RAILWAY ELECTRICAL SUPPLY MANUFACTURERS' ASSOCIATION.—J. McC. Price, Allen-Bradley Company, 600 W. Jackson Blvd., Chicago, Ill. Meets with Association of Railway Electrical Engineers.

RAILWAY FIRE PROTECTION ASSOCIATION.—P. A. Bissell, 40 Broad St., Boston, Mass. Annual meeting, October 19-20, 1937.

RAILWAY FUEL AND TRAVELING ENGINEERS' ASSOCIATION.—T. Duff Smith, 1255 Old Colony Bldg., Chicago, Ill. Annual meeting, September 28-30, 1937, Hotel Sherman, Chicago, Ill.

RAILWAY SUPPLY MANUFACTURERS' ASSOCIATION.—J. D. Conway, 1941 Oliver Bldg., Pittsburgh, Pa. To meet with Mechanical Division and Purchases and Stores Division, Association of American Railroads, June 16-23, 1937, Atlantic City, N. J.

RAILWAY TELEGRAPH AND TELEPHONE APPLIANCE ASSOCIATION.—G. A. Nelson, Waterbury Battery Company, 30 Church St., New York, N. Y. Meets with Telegraph and Telephone Section of A. A. R. Division I.

RAILWAY TIE ASSOCIATION.—Roy M. Edmonds, 1438 Syndicate Trust Bldg., St. Louis, Mo.

ROADMASTERS' AND MAINTENANCE OF WAY ASSOCIATION.—T. F. Donahoe, Gen. Supvr. Road, Baltimore & Ohio, Pittsburgh, Pa. Annual meeting, September 14-16, 1937, Hotel Stevens, Chicago, Ill.

SIGNAL APPLIANCE ASSOCIATION.—G. A. Nelson, Waterbury Battery Company, 30 Church St., New York, N. Y. Meets with A. A. R., Signal Section.

SOCIETY OF OFFICERS, UNITED ASSOCIATIONS OF RAILROAD VETERANS.—M. W. Jones, Baltimore & Ohio, Mt. Royal Station, Baltimore, Md. Annual meeting, October 9-10, 1937, Richmond, Va.

SOUTHERN AND SOUTHWESTERN RAILWAY CLUB.—A. T. Miller, 4 Hunter St., S. E., Atlanta, Ga. Regular meetings, third Thursday in January, March, May, July, September and November, Ansley Hotel, Atlanta, Ga.

SOUTHERN ASSOCIATION OF CAR SERVICE OFFICERS.—D. W. Brantley, C. of Ga. Ry., Savannah, Ga. Semi-annual meeting, July 15, 1937.

TOOL FOREMEN SUPPLIERS' ASSOCIATION.—E. E. Caswell, Union Twist Drill Co., 11 S. Clinton St., Chicago, Ill. Meets with American Railway Tool Foremen's Association.

TORONTO RAILWAY CLUB.—R. H. Burgess, P. O. Box 8, Terminal "A," Toronto, Ont. Regular meetings, fourth Monday of each month, except June, July and August, Royal York Hotel, Toronto, Ont.

TRACK SUPPLY ASSOCIATION.—D. J. Higgins, Gardner-Denver Company, 332 S. Michigan Ave., Chicago, Ill. Meets with Roadmasters' and Maintenance of Way Association.

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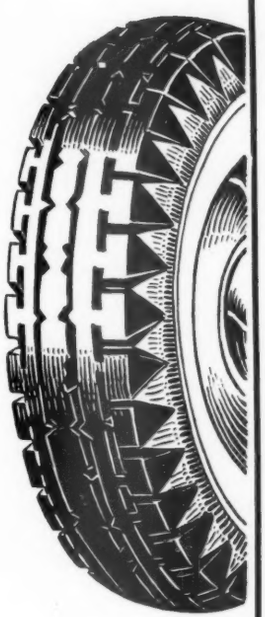
Comparable!



New life of both the automobile tire and the locomotive superheater are good for a certain mileage.

Their life cannot be computed in terms of "time", as wear takes its toll each mile—infrequent locomotive operation would spread the mileage life of the locomotive superheater over a relatively long period, while frequent operation would naturally use the mileage life much quicker.

Locomotive superheaters are manufactured and remanufactured to provide good mileage life—to be used over either a short period of time or over many years.

THE SUPERHEATER COMPANY

Representative of American Throttle Company, Inc.

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Peoples Gas Building, Chicago

Canada:
The Superheater Company, Limited, Montreal

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ELESCO

Tangential Steam Dryers
Superheaters - Superheated Steam Pyrometers - Exhaust Steam Injectors - Feed Water Heaters - American Throttles

TRAVELING ENGINEERS' ASSOCIATION.—(See Railway Fuel and Traveling Engineers' Association.)

WESTERN RAILWAY CLUB.—C. L. Emerson, C. M., St. P. & P., Chicago, Ill. Regular meetings, third Monday of each month, except June, July, August and September, Hotel Sherman, Chicago, Ill.

Equipment and Supplies

LOCOMOTIVES

THE SEABOARD AIR LINE has placed an order with the Baldwin Locomotive Works, for five locomotive tenders.

THE WHEELING & LAKE ERIE has placed an order with its own shops for the construction of ten 6-wheel switching locomotives, the material already having been ordered.

THE GREAT WESTERN, Denver, Colo., has ordered one locomotive of the 2-8-0 type, from the American Locomotive Company. This locomotive will have 19-in. by 26-in. cylinders and will weigh 162,000 lb. in working order. Inquiry for this equipment was reported in the *Railway Age* of March 6.

FREIGHT CARS

THE UNION PACIFIC is inquiring for 2,000 box car underframes and 700 automobile car underframes.

THE DELAWARE & HUDSON is building 100 box cars of 40 tons' capacity in its own shops. The material for this equipment has already been purchased.

THE CINCINNATI, NEW ORLEANS & TEXAS PACIFIC, reported in the *Railway Age* of April 17 as having ordered 2,000 box cars from the Pullman-Standard Car Manufacturing Company, has increased this number to 2,059.

THE ATLANTIC COAST LINE has placed orders for 700 freight cars as follows: To Bethlehem Steel Company, 100 phosphate cars; to the Mt. Vernon Car Manufacturing Company, 400 box and 200 automobile cars. Inquiry for this equipment was reported in the *Railway Age* of March 20.

THE READING COMPANY will build in its own shop at Reading, Pa., 650 freight cars, to include 300 single door box and 100 double door box, both of 50 tons' capacity and 40 ft. 6 in. long; 150 double door box and 50 box with end doors, both of 50 tons' capacity and 50 ft. 6 in. long, and 50 all-steel flat cars, 50 ft. long, of 70 tons' capacity. In addition, 50 hopper cars are to be converted into 50-ton cement hopper cars. The company has also authorized the purchase of two steel lighters, 110 ft. long with a beam of 33 ft. and a capacity of 450 tons.

PASSENGER CARS

THE CITY OF PHILADELPHIA, PA., DEPARTMENT OF CITY TRANSIT, will advertise on May 3 for bids for 50 new subway cars.

THE ATLANTIC COAST LINE has ordered 15 coaches and 15 express cars, from the Bethlehem Steel Company. Inquiry for this equipment was reported in the *Railway Age* of March 20.

IRON AND STEEL

THE MONONGAHELA has placed an order with the Carnegie-Illinois Steel Corporation for 1,000 tons of 112-lb. rail.

THE TENNESSEE CENTRAL has ordered 2,250 tons of rails from the Tennessee Coal, Iron & Railroad Company, deliveries to be made in May and June.

LEHIGH VALLEY.—A contract for 260 tons of steel has been let to the Bethlehem Steel Company for use in connection with grade crossing elimination work at Lodi, N. Y.

SIGNALING

ATCHISON, TOPEKA & SANTA FE.—An order has been placed with the Union Switch & Signal Co. by the Baldwin Locomotive Works for six sets of three-indication cab signal and three-speed train control equipment for installation on new steam locomotives now under construction, for passenger service on the Santa Fe.

ATCHISON, TOPEKA & SANTA FE.—An order has been placed with the Union Switch & Signal Co. by the Electro-Motive Corporation for one set of three-indication cab signal and three-speed train control equipment for installation on a new Diesel locomotive being built for the Atchison, Topeka & Santa Fe. This locomotive is to be used in the operation of the Super-Chief between Chicago and the Pacific Coast over the train control territory from Chicago to Fort Madison, Iowa.

THE CITY OF NEWARK, N. J., has awarded the Union Switch & Signal Co. a contract for the installation of the necessary electro-pneumatic interlocking and block signaling facilities in the new double track subway which connects the present City Subway with the Pennsylvania Railroad's new Newark Station. This work, which is being carried out in conjunction with the Pennsylvania Railroad improvement at this station, involves four complete electro-pneumatic interlockings, with the functions operated from four separate control points, and comprises 14 E.P. switch layouts, 54 interlocking and automatic light signals, alternating current track circuit equipment, etc.

MOTOR VEHICLES

THE SANTA FE TRAILS TRANSPORTATION COMPANY has ordered three buses from the American Car & Foundry Motors Company—two of 36-passenger capacity and one of 37-passenger capacity.

THE DENVER, COLORADO SPRINGS & PUEBLO MOTOR WAY has ordered from the American Car & Foundry Motors Company two 36-passenger buses powered with Hall-Scott engines.

Construction

BESSEMER & LAKE ERIE.—The following projects have been authorized: Filling Plum Creek viaducts and extending yard tracks, including subway for highway and creek arch at North Bessemer, Pa., to cost about $782,000 and the extension and alterations to roundhouse at Greenville, Pa., to cost $110,000. A contract has been given to the F. W. Miller Heating Company, Chicago, for a new washout plant at Greenville, Pa., to cost about $29,000.

ILLINOIS TERMINAL.—A contract has been awarded to the R. Dron Electric Company, Granite City, Ill., for the installation of 50 sodium vapor electric lights, each having a capacity of 1,000 candle-power on the McKinley bridge across the Mississippi river between St. Louis, Mo., and Venice, Ill. The lights are to be placed 100 ft. apart and will replace the present lights which range from 250 to 400 candle-power.

LOS ANGELES UNION PASSENGER TERMINAL.—A contract for the construction of the main station building has been awarded to Robert E. McKee, Los Angeles, Cal. The excavation for the main structure has been completed and the foundations are now under construction. Foundation piling is being driven by the Raymond Concrete Pile Company.

Progress is also being made in the construction of other parts of the terminal. The placing of embankments for the terminal tracks is practically complete; construction of mail, baggage and express facilities is nearing completion; and the Macy Street subway, passenger subway and ramps leading to the passenger tracks are nearly finished. Work on the train sheds, retaining walls and drainage systems is well under way. The new union station facilities were described in some detail in the *Railway Age* of January 16, 1937, page 142.

LOUISVILLE & NASHVILLE-BALTIMORE & OHIO-PENNSYLVANIA.—The Illinois Department of Public Works has awarded contracts for the construction of subways to carry the tracks of these railways over St. Clair avenue in East St. Louis, Ill., as follows: For grading the approaches, to the Fransen Construction Company, Chicago, $66,845; for the substructures, to the Blackwell Corporation, East St. Louis, Ill., $268,919; for the furnishing of fabricated structural steel, to the Bethlehem Steel Corporation, Bethlehem, Pa., $52,228; and for the erection of structural steel, to Fred Lorenz, Inc., Chicago Heights, Ill., $21,722.

STATEN ISLAND RAPID TRANSIT RAILWAY COMPANY.—This Baltimore & Ohio subsidiary opened bids on April 26 for building construction in connection with the elimination of grade crossings at Lynhurst, Chestnut and Cedar avenues, Staten Island, N. Y., to cost about $27,000. Bids will be received until May 14 for building construction in connection with the elimination of the grade crossing at St. Marys avenue, Staten Island, to cost about $47,000.

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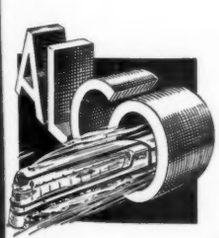
On March 20th, 1937, after less than 22 months of operation, the HIAWATHA carried its 500,000th revenue passenger.

Officials estimate the HIAWATHA trains earned approximately $1,000,000 net in 1936.



AMERICAN LOCOMOTIVE COMPANY

30 CHURCH STREET · NEW YORK · N·Y

Supply Trade

The Hyman-Michaels Company, Chicago, on May 1 will move its offices to the Peoples Gas, Light & Coke building, 122 South Michigan avenue.

Ivy Lee and **T. J. Ross,** on May 1, moved the firm's offices to the Chrysler building, 405 Lexington avenue, New York City.

Stanley T. Scofield, of the research department of the **United States Steel Corporation,** has been appointed assistant to vice-president, with headquarters at New York.

The Bucyrus-Erie Company, South Milwaukee, Wis., has moved its Seattle, Wash., office to 3408 First avenue. **James W. Bell,** Cedar Rapids, Iowa, has been appointed distributor in that territory.

John W. White, general manager of the **Westinghouse Electric International Company,** has been elected vice-president and general manager of the company, with headquarters at New York.

Frederic Ritz has been elected vice-president, in charge of Diesel engine manufacturing, of the **Hooven, Owens, Rentschler Company,** subsidiary of the **General Machinery Corporation,** Hamilton, Ohio.

The general sales offices of the **American Steel & Wire Company** have been moved to Cleveland, Ohio, from Chicago, in order to centralize them at the company's headquarters. Regional sales offices will be maintained in New York, Chicago and Baltimore.

Leo F. Duffy, formerly of the western railroad sales department of the **Chicago Pneumatic Tool Company,** has joined the sales organization of the **Youngstown Steel Door Company** and the **Camel Sales Company,** with headquarters at Chicago.

The Dayton Rubber Company, Dayton, Ohio, will build an addition to its main plant, to cost $100,000, to provide increased facilities for its belt division. The new building will be a two story and basement structure of brick and steel construction, 100 ft. by 140 ft., and will provide about 42,000 sq. ft. of manufacturing space.

L. J. Stephenson has been appointed electrical engineer of the **Pullman-Standard Car Manufacturing Company,** with headquarters at Chicago. Mr. Stephenson was formerly engineer heavy traction control for the Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa.

The General Motors Corporation, New York, has formed a new division, to be known as **Diesel Engine Division of General Motors Corporation.** The new division will manufacture a line of Winton Diesel engines, beginning with a 20 hp. single-cylinder unit up to a 160 hp. six-cylinder unit. Single-cylinder units are designed for stationary use only, whereas multi-cylinder units are all adaptable to marine, stationary or commercial vehicle use. The manufacture of Diesel engine fuel injectors which has been carried on in the General Motors Research Laboratories for the past seven years will be moved to a new plant. A 75 acre tract of land, located at the intersection of the Pere Marquette and Outer Drive, Detroit, Mich., has been purchased and erection of the new plant will be started at once. W. T. Crowe, on the staff of O. E. Hunt, vice-president of General Motors Corporation in charge of engineering, has been appointed general manager of this division.

Thomas W. Delanty, manager of eastern railroad sales for **Joseph T. Ryerson & Son, Inc.,** who has been representing that company in a sales capacity both in this country and in the Far East since 1918, has resigned to become associated with the **Ajax Hand Brake Company** as vice-president, with headquarters at Chicago.

OBITUARY

Edward M. Sawyer, formerly a railroad man, and for many years general manager of the railroad department of the International Correspondence Schools, Scranton, Pa., died in that city on April 20, at the age of 74 years. He was a native of Canada and began his railroad career in 1887 as a fireman on the Canadian Pacific; since 1899 he had been associated with the International Correspondence Schools. He was a member of the Air-Brake Association, International Railway Fuel Association, and a number of railroad clubs.

William C. Hedgcock, chief mechanical engineer of the American Steel Foundries, died on April 18 at Evanston, Ill., of leucocythemia. He was born in 1889 at Jeffersonville, Ind., and entered the employ of the Louisville & Nashville as a blue-print boy, from which position he progressed to assistant mechanical engineer. Later he became mechanical engineer of the Chicago, Indianapolis & Louisville at Lafayette, Ind. In 1913 he entered the engineering department of the American Steel Foundries. Immediately upon the declaration of war, he enlisted in the Ordnance department and was assigned to staff duty in Washington, achieving the rank of major in the Ordnance design division. After the war he returned to the employ of the American Steel Foundries and in 1929 was appointed chief mechanical engineer, which position he held until his death.

TRADE PUBLICATION

THERM-O-TILE.—The various steps in the installation of a Therm-O-Tile steam conduit system are described and illustrated in a pamphlet which was recently issued by H. W. Porter & Company, Inc., Newark, N. J.

Financial

ATCHISON, TOPEKA & SANTA FE.—*Abandonment.*—Examiner Jerome K. Lyle of the Interstate Commerce Commission, in a proposed report to the commission, has recommended that the commission authorize this company to abandon a line extending from Las Vegas, N. Mex., to Montezuma College, 5.4 miles.

ATCHISON, TOPEKA & SANTA FE.—*Directors.*—At the annual meeting of the stockholders, which was held at Topeka, Kan., on April 22, B. L. Hupp, president of the Loose-Wiles Biscuit Company, Kansas City, Mo., was elected a member of the board for four years, succeeding the late Edwin J. Berwind, New York. Edward J. Engel, Chicago, Earle W. Evans, Wichita, Kan., and William C. Potter, New York, members of the board of directors, whose terms of office expire this year, were re-elected.

ATLANTIC COAST LINE. — *Equipment Trust Certificates.*—The Interstate Commerce Commission, Division 4, has authorized this company to assume liability for $3,900,000 of 2¾ per cent equipment trust certificates, maturing in 15 equal annual installments of $260,000 on April 1, from 1938 to 1952. The issue has been sold to Brown, Harriman & Co., Inc., of New York, at 97.02, making the average annual interest cost to the company approximately 3.21 per cent.

BIRMINGHAM & SOUTHEASTERN.—*Abandonment.*—The Interstate Commerce Commission, Division 4, has authorized this company to abandon parts of its line extending from Milstead, Ala., to Union Springs, 27 mi., and from Tallassee, Ala., to Eclectic, 14 mi.

CHICAGO, ROCK ISLAND & PACIFIC.—*Reorganization.*—The Interstate Commerce Commission, Division 4, has ordered that the Bureau of Valuation's report on this company be incorporated into the record of the proceedings in reorganization of this company.

CHICAGO, ROCK ISLAND & PACIFIC.—*Abandonment.*—Examiner C. P. Howard, of the I.C.C., has recommended, in a proposed report, that the commission permit the abandonment by the Rock Island & Dardanelle of its entire line, extending from Ola, Ark., to a point near Dardanelle, 13.92 mi.; and that the Rock Island be permitted to abandon operation of the line.

CHICAGO, SOUTH SHORE & SOUTH BEND.—*Reorganization.*—The Interstate Commerce Commission, Division 4, has certified that the results of voting on the plan of reorganization of this company, which the commission submitted to the holders of securities, was as follows: Of the class I claims, 100 per cent of those voting voted to accept the plan, of the class III claims, 87.75 per cent of those voting voted to accept the plan and 12.25 per cent voted to reject it, of the class IV claims, 100 per cent of those voting voted to accept the

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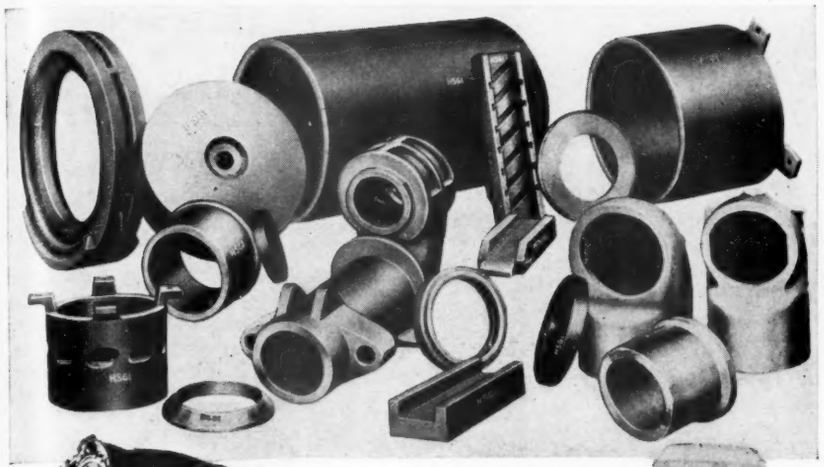
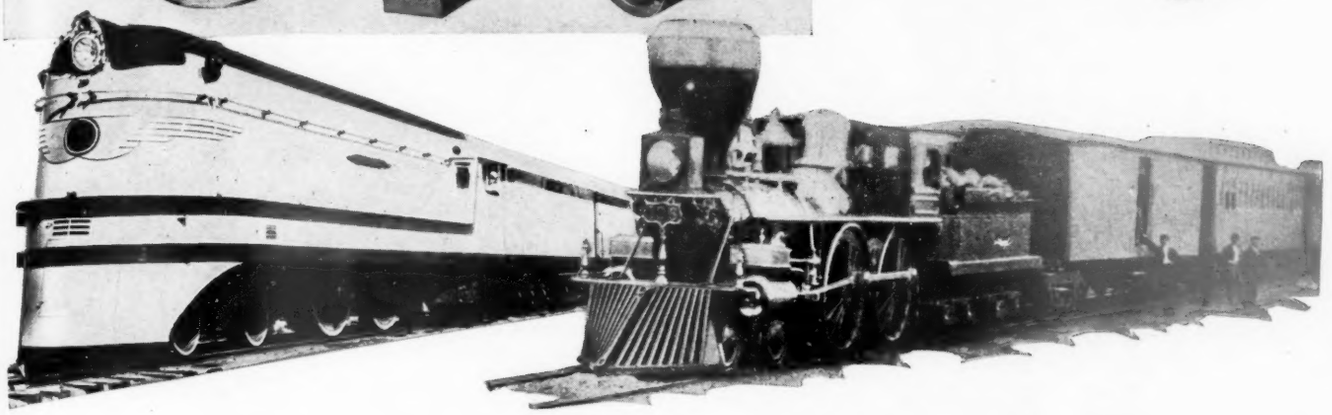


Times Change



and Quality Must Keep Pace

HUNT-SPILLER *Air Furnace* GUN IRON castings for locomotives have been manufactured to a consistently uniform, wear resisting quality that has produced manifold savings on many railroads.

H S G I is free from hard spots and sand holes—cast close to finished dimensions and readily machined. It is the ideal money-saving material for the vital wearing parts of your locomotives.

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Reg. U. S. Trade Mark
Cylinder Bushings
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Pistons or Piston Bull Rings
Valve Bushings
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Valve Bull Rings
Crosshead Shoes
Hub Liners
Shoes and Wedges
Floating Rod Bushings
Parts Finished For Application
Dunbar Sectional Type Packing
Duplex Sectional Type Packing for Cylinders and Valves
(Duplex Springs for Above Sectional Packing)
Cylinder Snap Rings
Valve Rings All Shapes

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V. W. Ellet Pres. & Gen. Mgr. / E. J. Fuller Vice-President
Office & Works
383 Dorchester Ave. South Boston, Mass.
Canadian Representative: Joseph Robb & Co., Ltd., 5575 Cote St. Paul Rd., Montreal, P. Q.
Export Agent for Latin America:
International Rwy. Supply Co., 30 Church Street, New York, N. Y.

HUNT-SPILLER *Air Furnace* GUN IRON

plan, and 99.97 per cent of the holders of capital stock who voted, accepted the plan, and .03 per cent rejected it. There were no class II claims filed.

CHICAGO, ST. LOUIS & NEW ORLEANS.—*Abandonment.*—This company has applied to the Interstate Commerce Commission for authority to abandon a line, and the Illinois Central has applied for authority to abandon operation of a line extending from mile post 4 on the McClains District to the end of the line at mile post 6.21, which is the North bank of the Ohio River, 2.21 miles; 1.19 miles being in Henderson County, Ky., and 1.02 miles being in Vandenburg County, Ind.

CHICAGO & WESTERN INDIANA.—*Annual Report.*—The 1936 annual report of this road shows net income, after interest and other charges, of $479,850, as compared with net income of $433,428 in 1935. Selected items from the income statement follow:

	1936	1935	Increase or Decrease
RAILWAY OPERATING REVENUES	$123,446	$103,743	+$19,702
Maintenance of way	13,356	13,037	+318
Maintenance of equipment	55,552	54,199	+1,352
Transportation—Rail	101,247	93,054	+8,193
TOTAL OPERATING EXPENSES	180,307	167,695	+12,612
Operating ratio	146.06	161.64	−15.58
NET LOSS FROM OPERATIONS	56,861	63,952	−7,090
Railway tax accruals	990,663	626,629	+364,033
Net Rents	2,781,634	2,377,422	+404,212
NET RAILWAY OPERATING INCOME	1,734,110	1,686,840	+47,269
Non-operating income	2,105,072	2,137,387	−32,315
TOTAL INCOME	3,839,182	3,824,228	+14,954
Rent for leased roads and equipment	.....	48,718	−48,718
Interest on funded debt	3,226,449	3,259,637	−33,188
TOTAL FIXED CHARGES	3,275,919	3,358,665	−82,745
NET INCOME	$479,850	$433,428	+$46,421

COLORADO & SOUTHERN.—*Branch Line.*—The Denver & Rio Grande Western has asked the federal district court of Denver for permission to take over the narrow gage line of the Colorado & Southern, extending from Gunnison, Colo., to Baldwin, about 20 miles.

DETROIT, TOLEDO & IRONTON.—*Equipment Trust Certificates.*—This company has applied to the Interstate Commerce Commission for authority to issue $2,000,000 of 2¾ per cent equipment trust certificates, maturing in 10 equal annual installments of $200,000 on May 1, from 1938 to 1947.

DETROIT, TOLEDO & MILWAUKEE.—*Abandonment.*—The Interstate Commerce Commission, Division 4, has authorized this company to abandon the line and the New York Central and the Michigan Central to abandon operation of the line extending from Battle Creek, Mich., to Morgan Park, 1.13 miles.

ILLINOIS CENTRAL.—*Equipment Trust.*—The First Boston Corporation and associated companies have offered $7,050,000 of 3 per cent 15-year equipment trust certificates of this company priced to yield from .75 per cent to 3.45.

LEHIGH VALLEY.—*Bonds.*—The Interstate Commerce Commission, Division 4, has authorized this company to pledge and repledge from time to time, to December 31, all or any part of $1,000,000 of general consolidated mortgage 5 per cent bonds as collateral security for a $500,000 2½ per cent short term note to the Marine Midland Trust Company of New York.

LONG ISLAND.—*Maturities.*—This company will pay on maturity May 1, $5,202,100 of 5 per cent debentures, and $650,000 of consolidated mortgage 5 per cent bonds of the Long Island City & Flushing.

NEW YORK, NEW HAVEN & HARTFORD.—*Trustee's Salary.*—The Interstate Commerce Commission, Division 4, has authorized a salary of $20,000 a year for Henry B. Sawyer as trustee of this company, beginning April 2.

NEW YORK, WESTCHESTER & BOSTON.—*Reorganization Difficulties.*—Federal Judge Hinks at New Haven on April 26, ordered counsel for the trustee of this company to file with the court an order setting forth that a reorganization of this property is impossible, and set May 15 as the final date for filing claims against the trustee.

NORTHERN PACIFIC.—*Equipment Trust Certificates.*—This company has applied to the Interstate Commerce Commission for authority to assume liability for $6,490,000 of 3½ per cent equipment trust certificates, maturing in 10 equal annual installments on May 1, from 1938 to 1947.

PENNSYLVANIA.—*Equipment Trust.*—A syndicate headed by Brown, Harriman & Company has offered $7,740,000 of 2.75 per cent 15-year equipment trust certificates of this company, priced to yield from 1.1 per cent to 3.15.

WESTERN MARYLAND.—*Abandonment.*—Examiner J. S. Prichard of the Interstate Commerce Commission, in a proposed report, has recommended that the commission authorize this company to abandon a branch line extending from Charlton, Md., to Nessle Junction, W. Va., 2.87 miles; and to authorize the Williamsport, Nessle & Martinsburg to abandon operation of this line. The report also recommends that the commission authorize the abandonment of a line of the Williamsport, Nessle & Martinsburg extending from Snyder, W. Va., to Nessle, 0.67 miles.

Dividends Declared

Norfolk & Western.—$2.50, quarterly, payable June 19 to holders of record May 29.

Reading.—Second Preferred, 50c, quarterly, payable July 8 to holders of record June 17.

Average Prices of Stocks and Bonds

	Apr. 27	Last week	Last year
Average price of 20 representative railway stocks..	56.35	59.02	44.46
Average price of 20 representative railway bonds..	80.77	82.74	78.56

Railway Officers

EXECUTIVE

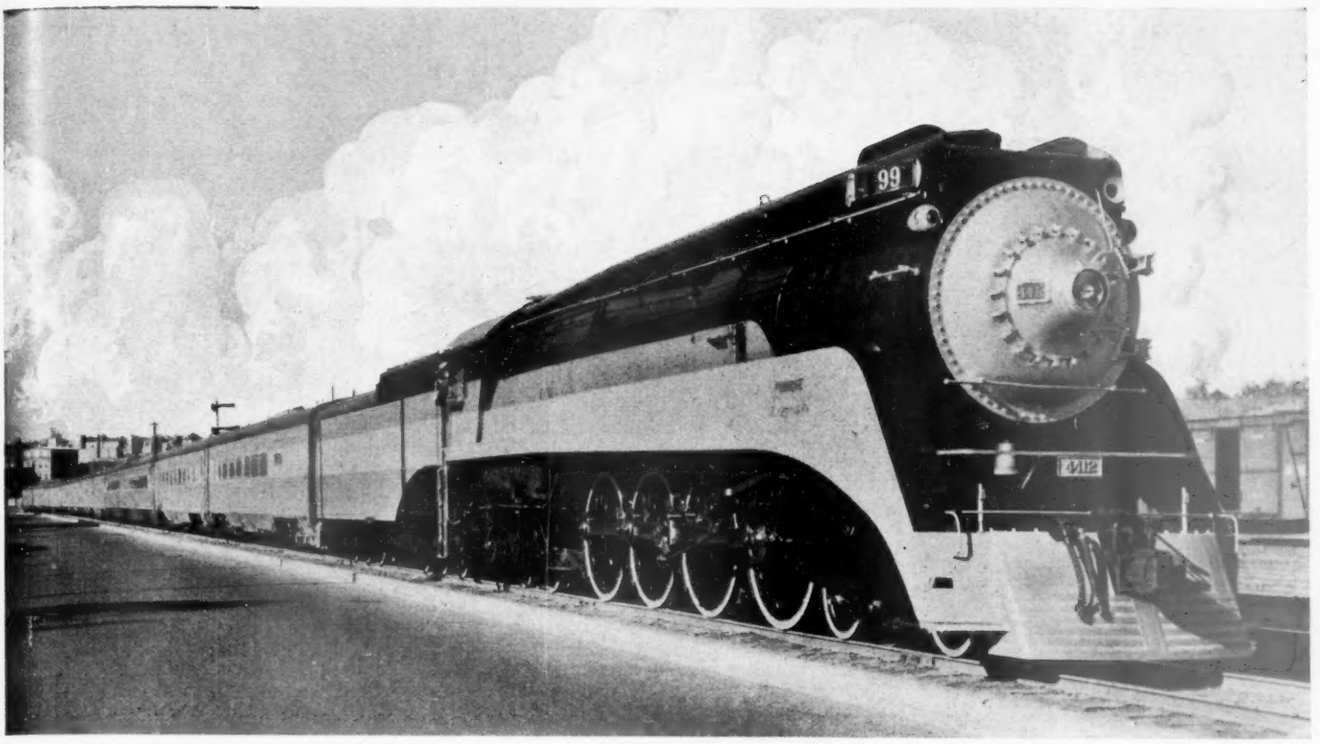
Ben F. Morris, whose appointment as assistant to the vice-president in charge of traffic of the Louisville & Nashville was reported in the *Railway Age* of April 10, has been identified with this company for 30 years. He was born at Sulphur, Ky., and entered the service of the L. & N. on February 1, 1907, in the mailing department of the office of the auditor of receipts at Louisville, Ky. Shortly thereafter he was transferred to the general freight office and after six years in that department he was transferred to the commerce branch of the general traffic department, where he became chief clerk in 1923. Three years later Mr. Morris was appointed commerce agent, a newly-created position, and on March 1, 1928, he was further advanced to the position of assistant to the freight traffic manager. In this capacity much of Mr. Morris' time was occupied as secretary of the Fourth Section Committee of the Southern carriers, until the committee was disbanded in March, 1931. During this period he was located at Atlanta, Ga., then returning to Louisville, where he has since remained.

Ben F. Morris

Herbert A. Taylor, general counsel and head of the legal department of the Erie, has been elected also vice-president with headquarters as before at Cleveland, Ohio. Mr. Taylor was born on October 6, 1876, at Beverly, N. J., and was educated at Cornell University and the University of Buffalo, receiving his LL.B. degree from the latter institution in 1898. Later in that year, while connected with the office of Moot, Sprague, Brownell & Marcy, Buffalo, N. Y., attorneys for the Erie, Mr. Taylor was admitted to the bar in that state. Shortly thereafter he became managing clerk in the legal department of the Erie and later held the positions of commerce counsel, assistant general solicitor and general attorney. During federal control of the railroads he

(*Continued on page 777*)

Table of Freight Operating Statistics begins on next left-hand page



BRAKE ACTION AS *Smooth* AS THE TRAIN'S APPEARANCE

THE Southern Pacific new "Daylight" trains are handsome, comfortable, speedy, SAFE . . . Just as these trains are the most modern in appearance and appointments to satisfy the esthetic taste and comfort desire of railroad patrons, just so is the brake equipment of the most up-to-date type to satisfy the demand for safe travel on accelerated schedules . . . Here is another extension of the streamline principle, and a broader application of the HSC Brake Equipment—to trains hauled by steam locomotives . . . Smooth, accurate control is thus assured while travelling over level territory and descending mountain grades.

WESTINGHOUSE AIR BRAKE CO.

GENERAL OFFICE AND WORKS « » WILMERDING, PENNSYLVANIA

(1313)

Freight Operating Statistics of Large Steam Railways—Selected Items for the Month of February,

Region, road, and year	Miles of road operated	Train-miles	Locomotive-miles: Principal and helper	Locomotive-miles: Light	Car-miles: Loaded (*thousands*)	Car-miles: Per cent loaded	Ton-miles (*thousands*): Gross, excluding locomotives and tenders	Ton-miles (*thousands*): Net, revenue and non-revenue	Number of road locomotives on line: Serviceable, Not stored	Number of road locomotives on line: Serviceable, Stored	Number of road locomotives on line: Unserviceable	Per cent unserviceable
New England Region:												
Boston & Albany....1937	373	138,267	141,861	8,659	3,127	69.6	165,570	59,724	60	3	29	31.5
1936	373	140,739	146,653	11,014	2,885	68.8	155,499	57,925	57	5	30	32.6
Boston & Maine....1937	1,941	264,912	297,643	24,085	9,422	71.7	511,497	195,443	139	..	136	49.5
1936	1,972	284,258	322,690	31,716	9,117	68.3	518,152	197,626	131	3	165	55.2
N. Y., New Hav. & Hartf..1937	2,010	322,237	402,533	23,030	11,455	69.5	605,134	229,626	189	7	82	29.6
1936	2,038	342,481	422,803	22,223	10,811	66.3	607,088	237,741	188	5	101	35.2
Great Lakes Region:												
Delaware & Hudson....1937	830	213,762	292,834	33,791	7,784	67.8	478,951	235,556	105	127	33	12.5
1936	831	234,461	328,195	43,467	7,597	64.1	493,845	242,870	123	130	28	10.0
Del., Lack. & Western....1937	983	350,779	390,229	51,650	11,813	70.3	674,953	272,720	145	..	92	38.8
1936	992	394,603	451,622	68,852	11,847	65.6	730,206	311,332	153	1	83	35.0
Erie (incl. Chi. & Erie)...1937	2,284	653,849	697,287	37,531	29,128	70.5	1,687,291	704,250	220	36	215	45.6
1936	2,298	705,630	750,329	45,704	26,981	66.7	1,664,912	701,002	226	24	228	47.7
Grand Trunk Western....1937	1,027	251,873	256,997	3,554	6,992	69.8	401,012	157,841	84	..	52	38.2
1936	1,027	253,617	260,887	3,319	6,227	64.7	372,842	138,674	79	..	60	43.2
Lehigh Valley 1937	1,303	355,623	386,840	46,494	12,973	68.4	781,898	337,377	146	8	130	45.8
1936	1,318	412,249	447,780	50,348	12,492	66.5	792,322	353,468	147	..	145	49.7
New York Central.....1937	10,790	2,838,932	2,997,100	181,615	95,714	61.8	6,179,541	2,671,664	958	75	455	30.6
1936	10,789	2,803,700	2,992,660	194,938	86,535	60.6	5,756,231	2,504,835	940	13	550	36.6
N. Y., Chicago & St. Louis.1937	1,672	529,087	537,496	8,615	18,524	68.0	1,123,042	474,736	167	8	19	9.8
1936	1,674	516,429	522,498	8,273	15,636	65.8	947,179	379,643	157	7	25	13.2
Pere Marquette 1937	2,081	354,252	369,914	5,846	9,258	65.1	582,614	238,943	118	3	31	20.4
1936	2,081	376,059	389,056	7,717	8,757	63.0	581,213	245,252	111	..	36	24.5
Pittsburgh & Lake Erie....1937	234	96,948	100,544	.....	3,743	59.5	316,470	175,432	34	4	26	40.6
1936	234	83,730	86,724	43	2,970	57.7	256,711	141,450	36	5	30	42.3
Wabash 1937	2,434	602,800	618,057	13,043	18,340	67.9	1,058,326	398,823	151	28	121	40.3
1936	2,435	606,203	634,520	14,120	16,770	64.2	1,017,480	376,299	153	14	141	45.8
Central Eastern Region:												
Baltimore & Ohio.....1937	6,351	1,518,140	1,873,840	206,111	48,561	65.1	3,245,788	1,552,255	710	25	546	42.6
1936	6,367	1,496,480	1,854,709	192,284	41,644	63.4	2,904,582	1,381,080	670	7	632	48.3
Central of New Jersey....1937	681	145,221	162,690	32,172	4,677	62.5	315,630	151,366	57	16	74	50.3
1936	681	161,046	182,885	35,608	5,207	60.2	376,253	190,502	65	2	88	56.8
Chicago & Eastern Illinois.1937	931	180,601	181,309	2,872	5,048	66.6	322,604	145,140	58	..	43	42.6
1936	931	180,092	180,360	3,602	4,388	66.2	287,473	132,130	57	..	52	47.7
Elgin, Joliet & Eastern....1937	435	114,121	117,643	2,565	2,925	61.6	230,026	117,719	63	..	21	25.0
1936	434	104,532	106,539	2,054	2,432	63.9	188,051	97,434	56	..	31	35.6
Long Island 1937	393	27,930	28,575	14,332	239	51.4	18,569	7,297	34	5	11	22.0
1936	393	32,038	32,890	17,469	282	51.0	21,992	9,726	37	2	13	25.0
Pennsylvania System 1937	10,028	3,213,442	3,685,816	424,495	111,342	63.3	7,547,200	3,434,773	1,574	314	434	18.7
1936	10,034	3,053,611	3,501,438	410,422	97,231	61.6	6,835,620	3,156,308	1,436	57	934	38.5
Reading 1937	1,445	436,950	478,199	56,110	12,542	63.4	914,307	457,062	203	35	80	25.2
1936	1,449	472,655	523,267	64,662	12,316	61.6	926,581	467,717	222	39	86	24.8
Pocahontas Region:												
Chesapeake & Ohio.....1937	3,050	867,689	937,923	45,737	38,503	56.6	3,285,006	1,805,166	410	23	112	20.6
1936	3,050	915,954	980,351	49,799	38,705	56.5	3,313,713	1,838,286	399	29	97	18.5
Norfolk & Western.....1937	2,183	710,396	774,999	43,570	28,902	59.5	2,442,924	1,319,412	278	58	25	6.9
1936	2,145	682,926	726,381	36,731	26,119	59.9	2,204,550	1,183,504	269	56	50	13.3
Southern Region:												
Atlantic Coast Line.....1937	5,116	656,745	658,506	9,613	14,826	60.8	816,791	270,399	253	15	91	25.3
1936	5,141	569,904	571,168	7,388	12,037	63.0	645,740	215,442	254	19	144	34.5
Central of Georgia.....1937	1,886	256,652	260,128	4,367	5,695	72.8	311,638	123,441	98	..	26	21.0
1936	1,886	233,086	234,203	3,331	4,824	70.8	264,740	100,524	91	..	33	26.6
Illinois Central (incl. Y. 1937	6,556	1,504,786	1,520,314	29,519	37,524	66.4	2,400,795	1,055,193	682	8	185	21.1
& M. V.).....1936	6,566	1,535,419	1,557,446	31,357	35,438	64.3	2,358,987	1,044,267	643	1	213	24.9
Louisville & Nashville.....1937	4,935	1,079,777	1,173,306	28,846	23,700	61.6	1,639,706	785,329	383	1	185	32.5
1936	5,007	1,108,214	1,203,261	38,930	24,548	60.1	1,757,293	859,763	340	4	238	40.9
Seaboard Air Line.....1937	4,295	544,432	563,163	3,097	14,071	65.1	824,563	296,480	250	1	61	19.6
1936	4,295	463,324	473,196	3,015	11,379	67.9	643,407	236,477	232	1	98	29.6
Southern 1937	6,596	1,369,434	1,396,364	21,554	32,642	68.9	1,826,020	750,867	510	18	251	32.2
1936	6,596	1,200,648	1,218,618	20,990	25,985	68.0	1,464,897	594,093	460	42	289	36.5
Northwestern Region:												
Chicago & North Western..1937	8,330	927,430	967,046	26,423	23,105	62.2	1,467,562	547,585	358	81	269	38.0
1936	8,355	994,420	1,071,808	34,789	22,111	66.8	1,385,602	508,553	475	47	251	32.5
Chicago Great Western....1937	1,450	255,770	258,762	8,038	6,957	66.8	418,919	165,837	62	..	27	30.3
1936	1,458	182,340	190,700	12,354	4,953	66.7	306,051	125,826	67	..	22	24.7
Chi., Milw., St. P. & Pac..1937	11,107	1,315,369	1,429,706	66,952	34,184	63.4	2,187,834	914,062	450	109	115	17.1
1936	11,115	1,294,659	1,413,925	86,971	30,225	63.4	1,961,014	843,940	529	49	121	17.3
Chi., St. P., Minneap. & Om.1937	1,636	224,260	236,141	12,849	4,537	63.7	288,866	120,255	82	40	20	14.1
1936	1,637	236,735	274,470	16,201	4,608	63.4	299,974	131,332	102	22	25	16.8
Great Northern 1937	7,997	729,490	735,430	29,844	20,357	63.3	1,303,521	534,537	363	41	162	28.6
1936	8,093	729,600	732,746	29,553	18,397	66.8	1,144,668	485,756	345	69	158	27.6
Minneap., St. P. & S. St. M.1937	4,278	372,612	381,584	5,658	7,870	67.7	449,379	186,629	127	..	24	15.9
1936	4,273	357,633	367,781	5,774	6,945	70.3	401,357	172,530	129	..	23	15.1
Northern Pacific 1937	6,429	724,555	805,501	44,996	21,165	66.7	1,312,480	573,888	385	8	72	15.5
1936	6,429	640,019	698,337	49,119	16,512	70.2	974,434	430,051	350	16	79	17.8
Central Western Region:												
Alton 1937	912	213,527	218,754	2,491	5,063	67.3	309,266	109,290	77	1	21	21.2
1936	928	201,775	204,705	2,208	4,175	61.1	275,357	102,469	71	3	29	28.2
Atch., Top. & St. Fe (incl. 1937	13,362	1,725,540	1,883,178	83,324	47,154	64.4	2,878,170	1,016,254	569	63	330	34.3
G.C. & S.F. & P. & S.F.).1936	13,235	1,554,587	1,665,924	65,081	39,028	64.4	2,374,553	823,253	526	100	368	37.0
Chicago, Burl. & Quincy...1937	8,934	1,317,923	1,368,513	46,989	33,984	63.6	2,074,933	905,361	468	..	75	13.8
1936	8,969	1,362,526	1,443,164	59,629	33,212	62.2	2,063,186	896,141	466	3	76	13.9
Chi., Rock I. & Pac. (incl. 1937	8,129	1,167,383	1,184,857	6,895	25,920	63.5	1,578,672	596,615	385	6	272	41.0
Chi., Rock I. & Gulf)...1936	8,176	1,025,212	1,057,868	7,974	21,973	65.6	1,312,634	504,033	392	8	325	44.8
Denv. & Rio Gr. Western..1937	2,576	315,674	354,698	43,274	7,063	64.5	458,077	201,762	169	3	21	10.9
1936	2,584	248,787	277,538	30,920	6,128	65.3	385,500	164,456	155	7	44	21.4
Southern Pac.—Pac. Lines.1937	8,614	1,469,420	1,637,826	216,829	47,392	66.2	2,885,141	1,059,997	472	128	172	22.3
1936	8,596	1,162,793	1,264,000	141,518	37,889	66.0	2,289,478	795,677	443	108	238	30.2
Union Pacific 1937	9,918	1,896,007	1,979,140	120,881	53,394	65.7	3,267,973	1,270,291	647	47	169	19.6
1936	9,825	1,762,681	1,838,893	111,897	47,309	63.7	2,937,099	1,114,028	624	58	200	22.7
Southwestern Region:												
Mo.-Kansas-Texas Lines ..1937	3,282	376,184	381,195	6,935	9,810	62.1	604,958	218,330	94	36	77	37.2
1936	3,282	362,526	367,242	5,929	9,292	63.5	549,358	190,515	101	25	79	38.5
Missouri Pacific 1937	7,143	1,350,981	1,410,438	31,237	39,019	63.4	2,492,477	970,348	386	51	105	19.4
1936	7,201	1,291,785	1,355,906	32,135	32,986	60.8	2,171,096	819,038	354	61	131	23.8
St. Louis-San Francisco...1937	4,888	785,258	798,151	11,168	17,154	64.7	1,056,681	428,434	278	56	69	17.1
1936	4,888	636,027	640,438	8,029	13,110	64.5	785,365	307,275	279	104	65	14.5
St. Louis Southw. Lines...1937	1,733	315,792	317,448	4,317	8,664	69.5	488,901	184,904	111	4	5	4.2
1936	1,767	283,586	293,655	3,667	7,733	64.5	441,681	145,633	102	7	11	9.2
Texas & New Orleans.....1937	4,415	619,189	619,472	10,261	15,912	71.0	947,027	375,885	196	49	40	14.0
1936	4,415	555,324	557,386	7,613	13,155	64.1	814,347	272,365	207	36	59	19.5
Texas & Pacific.....1937	1,944	311,692	311,692	2,477	8,863	61.2	566,022	191,350	51	66	94	44.5
1936	1,945	260,282	260,282	1,413	7,844	61.4	479,352	157,722	60	62	98	44.5

Compiled by the Bureau of Statistics, Interstate Commerce Commission. Subject to revision.

1937, Compared with February, 1936, for Roads with Annual Operating Revenues Above $25,000,000

Region, road, and year	Number of freight cars on line: Home	Foreign	Total	Per cent unserviceable	Gross ton-miles per train-hour, excluding locomotives and tenders	Gross ton-miles per train-mile, excluding locomotives and tenders	Net ton-miles per train-mile	Net ton-miles per loaded car-mile	Net ton-miles per car-day	Car-miles per car-day	Net ton-miles per mile of road per day	Pounds of coal per 1,000 gross ton-miles, including locomotives and tenders	Locomotive-miles per locomotive-day
New England Region:													
Boston & Albany....1937	2,330	4,285	6,615	24.2	20,942	1,208	436	19.1	320	24.1	5,720	169	62.0
1936	2,251	5,070	7,321	21.1	18,455	1,110	414	20.1	283	20.5	5,354	190	59.1
Boston & Maine....1937	7,303	9,121	16,424	13.3	26,578	1,940	741	20.7	434	29.2	3,596	108	46.7
1936	7,995	9,025	17,020	15.0	23,467	1,829	698	21.7	412	27.8	3,456	126	45.1
N. Y., New Hav. & Hartf..1937	9,244	13,367	22,611	14.5	27,251	1,908	724	20.0	371	26.6	4,079	111	61.8
1936	12,382	13,363	25,745	18.0	24,106	1,814	710	22.0	319	21.9	4,022	123	58.3
Great Lakes Region:													
Delaware & Hudson....1937	7,550	3,645	11,195	5.4	31,576	2,254	1,108	30.3	730	35.5	10,133	114	47.3
1936	6,413	4,200	10,613	4.0	27,459	2,118	1,042	32.0	758	36.9	10,081	127	51.8
Del., Lack. & Western....1937	12,524	7,186	19,710	17.6	33,257	1,948	787	23.1	501	30.9	9,912	140	72.3
1936	13,117	7,908	21,025	16.6	27,700	1,883	803	26.3	525	30.4	10,824	164	81.1
Erie (incl. Chi. & Erie)...1937	18,462	18,022	36,484	4.1	42,774	2,599	1,085	24.2	713	41.9	11,011	105	61.6
1936	17,959	16,488	34,447	5.5	36,822	2,381	1,003	26.0	733	42.3	10,521	121	64.2
Grand Trunk Western....1937	3,933	9,147	13,080	15.4	30,774	1,606	632	22.6	451	28.6	5,488	114	74.3
1936	3,794	8,659	12,453	15.5	25,991	1,489	554	22.3	382	26.5	4,656	130	71.2
Lehigh Valley 1937	11,391	10,609	22,000	6.7	39,042	2,235	965	26.0	537	30.2	9,244	133	58.7
1936	10,843	11,947	22,790	7.0	31,383	1,976	881	28.3	550	29.3	9,247	146	62.6
New York Central.....1937	84,822	76,069	160,891	15.0	35,328	2,207	954	27.9	597	34.6	8,843	115	84.6
1936	102,170	74,230	176,400	17.9	30,697	2,079	905	28.9	495	28.2	8,006	126	81.2
N. Y., Chicago & St. Louis.1937	5,016	10,439	15,455	3.2	37,041	2,134	902	25.6	1,161	66.7	10,142	99	107.3
1936	6,076	9,689	15,765	4.0	30,757	1,840	737	24.3	847	53.1	7,819	115	103.9
Pere Marquette 1937	6,144	8,339	14,483	3.4	27,461	1,648	676	25.8	605	36.0	4,100	103	95.7
1936	8,802	9,779	18,581	4.5	22,963	1,546	652	28.0	473	26.8	4,063	122	99.7
Pittsburgh & Lake Erie....1937	9,712	11,720	21,432	39.1	41,586	3,281	1,819	46.9	285	10.2	26,795	96	62.1
1936	13,567	10,835	24,402	43.7	41,844	3,075	1,695	47.6	194	7.1	20,860	106	43.5
Wabash 1937	8,890	11,263	20,153	6.4	36,305	1,775	669	21.7	703	47.6	5,852	124	77.8
1936	9,770	11,569	21,339	3.8	29,914	1,707	631	22.4	609	42.3	5,329	148	76.0
Central Eastern Region:													
Baltimore & Ohio.....1937	56,858	33,854	90,712	15.6	26,276	2,182	1,044	32.0	608	29.2	8,729	156	61.9
1936	64,806	25,861	90,667	19.0	24,008	1,978	941	33.2	522	24.8	7,480	170	58.1
Central of New Jersey....1937	10,146	9,918	20,064	32.1	27,032	2,260	1,084	32.4	270	13.4	7,936	143	62.2
1936	10,909	12,042	22,951	28.7	26,448	2,430	1,230	36.6	293	13.3	9,643	151	67.5
Chicago & Eastern Illinois.1937	2,368	4,665	7,033	2.5	29,733	1,803	811	28.8	729	38.1	5,570	128	68.4
1936	2,610	4,286	6,896	5.7	25,987	1,611	740	30.1	677	34.0	4,892	152	60.4
Elgin, Joliet & Eastern....1937	7,731	7,430	15,161	4.6	16,254	2,090	1,070	40.2	289	11.7	9,670	129	77.6
1936	9,084	4,168	12,252	5.9	13,799	1,862	965	40.1	274	10.7	7,740	148	65.7
Long Island 1937	383	2,929	3,312	2.3	5,162	678	266	30.5	80	5.1	664	361	43.9
1936	709	3,406	4,115	2.2	5,125	707	313	34.5	82	4.7	854	370	50.1
Pennsylvania System 1937	181,857	73,158	255,015	16.9	33,755	2,395	1,090	30.8	484	24.8	12,233	128	70.1
1936	194,772	63,698	258,470	16.6	29,044	2,278	1,052	32.5	420	21.0	10,847	141	62.8
Reading 1937	22,704	15,212	37,916	5.7	27,114	2,097	1,048	36.4	436	18.9	11,300	144	62.9
1936	23,926	14,629	38,555	10.1	21,836	1,967	993	38.0	422	18.1	11,130	168	68.3
Pocahontas Region:													
Chesapeake & Ohio.....1937	37,904	12,896	50,800	1.2	49,466	3,899	2,143	46.9	1,197	45.1	21,137	84	70.1
1936	30,517	9,359	39,876	1.9	49,029	3,677	2,040	47.5	1,483	55.2	20,785	91	73.2
Norfolk & Western.....1937	28,863	6,684	35,547	1.9	49,845	3,492	1,886	45.7	1,182	43.5	21,588	105	87.1
1936	25,529	4,929	30,458	2.1	46,371	3,266	1,753	45.3	1,210	44.5	19,028	115	75.5
Southern Region:													
Atlantic Coast Line.....1937	16,794	11,824	28,618	20.5	21,597	1,245	412	18.2	340	30.6	1,888	116	70.3
1936	21,385	8,135	29,520	19.0	19,804	1,134	378	17.9	245	21.7	1,445	127	51.4
Central of Georgia.....1937	2,746	5,595	8,341	2.2	22,316	1,220	483	21.7	545	34.5	2,338	132	84.1
1936	4,060	3,191	7,251	7.4	20,618	1,143	434	20.8	478	32.4	1,838	133	66.1
Illinois Central (incl. Y. 1937	28,975	27,033	56,008	19.8	24,121	1,623	713	28.1	666	35.7	5,748	145	67.5
& M. V.).....1936	36,908	25,396	62,304	31.0	23,779	1,556	689	29.5	593	31.3	5,484	158	69.2
Louisville & Nashville.....1937	31,691	14,356	46,047	15.3	21,492	1,523	729	33.1	627	30.7	5,684	141	80.5
1936	33,191	8,077	41,268	27.4	23,800	1,588	777	35.0	685	32.5	5,921	149	78.0
Seaboard Air Line.....1937	8,942	9,944	18,886	1.7	25,035	1,538	553	21.1	567	41.4	2,465	126	71.4
1936	9,701	5,883	15,584	2.6	23,092	1,413	519	20.8	509	36.1	1,898	132	49.6
Southern 1937	20,572	23,103	43,675	13.8	21,525	1,351	556	23.0	612	38.6	4,066	151	67.5
1936	22,933	18,293	41,226	13.0	19,627	1,234	501	22.9	484	31.1	3,106	169	56.1
Northwestern Region:													
Chicago & North Western..1937	33,372	21,959	55,331	6.2	24,027	1,629	608	23.7	353	24.0	2,348	143	55.1
1936	37,964	33,197	71,161	6.8	18,603	1,405	516	23.0	260	22.2	2,099	176	49.4
Chicago Great Western....1937	1,785	5,305	7,090	2.9	26,625	1,640	649	23.8	848	53.3	4,084	162	114.8
1936	1,811	6,722	8,533	2.5	21,461	1,692	696	25.4	580	34.2	2,976	185	85.5
Chi., Milw., St. P. & Pac...1937	39,767	22,521	62,288	2.9	25,650	1,672	699	26.7	521	30.7	2,939	148	85.9
1936	43,605	27,573	71,178	3.4	20,738	1,534	660	27.9	417	23.5	2,618	166	80.7
Chi., St. P., Minneap. & Om.1937	4,040	4,677	8,717	9.6	16,503	1,304	543	26.5	457	27.0	2,625	139	67.9
1936	3,478	7,668	11,146	9.7	14,007	1,284	562	28.5	439	24.3	2,767	163	76.7
Great Northern 1937	35,309	11,862	47,171	8.9	26,141	1,799	738	26.3	407	24.5	2,387	149	53.1
1936	36,328	11,152	47,480	8.3	21,283	1,588	674	26.4	352	20.0	2,070	173	49.7
Minneap., St. P. & S. St. M.1937	11,299	5,798	17,097	4.3	18,017	1,218	506	23.7	391	24.3	1,558	129	93.2
1936	11,411	5,777	17,188	6.3	15,691	1,135	488	24.8	350	20.0	1,392	148	85.3
Northern Pacific 1937	25,435	7,761	33,196	8.8	27,304	1,821	796	27.1	615	34.0	3,188	169	71.2
1936	27,259	5,463	32,722	12.4	22,013	1,531	676	26.0	436	23.8	2,307	194	62.6
Central Western Region:													
Alton 1937	2,330	5,888	8,218	26.2	32,571	1,454	514	21.6	479	32.9	4,282	135	83.6
1936	2,388	6,445	8,833	26.4	29,557	1,374	511	24.5	403	26.9	3,807	143	74.4
Atch., Top. & St. Fe (incl. 1937	61,333	14,815	76,148	8.8	31,863	1,672	590	21.6	470	33.8	2,716	135	77.1
G.C. & S.F. & P. & S.F.).1936	66,746	11,894	78,640	11.4	28,825	1,530	530	21.1	357	26.3	2,145	140	64.4
Chicago, Burl. & Quincy...1937	23,426	19,143	42,569	8.2	27,673	1,581	690	26.6	748	44.1	3,619	142	98.1
1936	25,842	18,675	44,517	10.9	24,210	1,523	662	27.0	698	41.6	3,445	158	101.0
Chi., Rock I. & Pac. (incl. 1937	19,486	14,686	34,172	6.9	23,561	1,355	512	23.0	607	41.5	2,621	155	67.5
Chi., Rock I. & Gulf)...1936	24,943	16,226	41,169	12.0	20,984	1,286	494	22.9	429	28.5	2,126	170	53.6
Denv. & Rio Gr. Western..1937	11,189	4,009	15,198	5.4	22,000	1,459	643	28.6	460	25.0	2,797	189	77.9
1936	11,867	3,106	14,973	7.2	22,511	1,559	665	26.8	376	21.5	2,195	173	55.5
Southern Pac.—Pac. Lines.1937	31,851	34,714	66,565	5.5	30,645	1,978	727	22.4	582	39.3	4,395	118	90.6
1936	33,806	22,151	55,957	9.7	32,567	1,982	689	21.0	484	34.9	3,192	110	64.8
Union Pacific 1937	36,276	21,921	58,197	10.4	34,508	1,734	674	23.8	766	49.0	4,574	143	90.5
1936	38,860	18,217	57,077	14.5	32,972	1,680	637	23.5	661	44.0	3,910	149	76.3
Southwestern Region:													
Mo.-Kansas-Texas Lines ..1937	3,179	6,398	9,577	2.5	29,928	1,611	581	22.3	845	61.2	2,376	98	71.8
1936	4,864	4,647	9,511	3.8	28,194	1,520	527	20.5	681	52.3	2,002	109	67.4
Missouri Pacific 1937	11,855	27,420	39,275	2.5	31,303	1,858	723	24.9	839	53.3	4,851	127	100.8
1936	14,443	22,942	37,385	3.5	28,866	1,689	637	24.8	771	51.1	3,922	146	93.2
St. Louis-San Francisco....1937	14,648	8,711	23,359	7.3	24,624	1,352	548	25.0	610	37.8	3,130	147	75.1
1936	17,041	6,726	23,767	6.8	23,226	1,238	484	23.4	446	29.5	2,168	160	53.5
St. Louis Southw. Lines...1937	2,284	4,662	6,946	3.7	26,987	1,557	589	21.3	929	62.6	3,810	107	98.9
1936	3,130	3,214	6,344	4.9	28,298	1,565	516	18.8	799	65.3	2,842	110	87.5
Texas & New Orleans.....1937	6,119	14,374	20,493	6.5	28,052	1,543	612	23.6	665	39.6	3,041	92	82.4
1936	7,527	11,562	19,089	7.2	27,093	1,480	495	20.7	484	36.5	2,127	95	68.7
Texas & Pacific.....1937	1,913	6,239	8,152	3.1	31,651	1,820	615	21.6	867	65.7	3,516	93	57.2
1936	2,231	4,653	6,884	3.7	30,082	1,844	607	20.1	805	65.2	2,796	94	44.6

News (Railway Officers)

(*Continued from page 774*)

served for two years in the office of the director general of railroads, becoming general assistant to the director general. When the railroads were returned to their

Herbert A. Taylor

owners Mr. Taylor resumed his service with the Erie as general solicitor. He has been general counsel in charge of the legal department since July, 1931.

OPERATING

P. Burton Bridges, who has been appointed superintendent of the Louisiana and Alabama divisions of the Gulf, Mobile & Northern, with headquarters at Jackson, Miss., as reported in the *Railway Age* of April 17, was born on May 28, 1885, in Rankin county, Miss. Mr. Bridges entered railway service in 1904 with the Illinois Central, serving as a clerk and switchman at Jackson, Miss., until 1906. In that year he entered the service of a predecessor of the Gulf, Mobile & Northern at Laurel, Miss. as a brakeman. Later in the same year he was advanced to con-

P. Burton Bridges

ductor and in 1921 he was promoted to yardmaster at Laurel. In the following year, Mr. Bridges was further advanced to trainmaster of the Alabama division and on January 1, 1930, he was transferred to the Louisiana division. On October 1, 1936, Mr. Bridges was promoted to assistant superintendent of the Louisiana division, holding this position until his recent appointment as superintendent of the Louisiana and Alabama divisions.

Arthur C. Tosh, superintendent of the Shamokin division of the Reading, with headquarters at Tamaqua, Pa., has been appointed superintendent of transportation of the Reading and the Central of New Jersey, succeeding **A. T. Owen,** whose death on April 13 was reported in the *Railway Age* of April 24. Mr. Tosh entered the service of the Reading in September, 1909, as night clerk and operator at Catasauqua, Pa., and in June of the following year he became day operator at the same point. On September 27, 1911, Mr. Tosh became telegraph operator in the train dispatcher's office at Reading and a year later he was appointed extra agent at East Penn Junction, Pa., remaining there until November, 1912, when he was transferred to Reading in the same capacity. Mr. Tosh was appointed agent at Catasauqua, Pa., in March, 1916, and later

Arthur C. Tosh

became dispatcher at that point. In November, 1917, Mr. Tosh's title was changed to inspector in the general manager's office and in March, 1920, he was appointed inspector of transportation at Reading. He was appointed superintendent of highway transportation in July, 1926, and two years later he became superintendent of the Reading Transportation Company. Mr. Tosh retained the latter position along with that of superintendent passenger transportation for the Reading, to which he was appointed in March, 1930, until March, 1934, when he was appointed superintendent of the Shamokin division of the Reading, the position he held until his recent appointment.

R. F. Dickerson, superintendent of the Lehigh and Susquehanna division of the Central of New Jersey, with headquarters at Mauch Chunk, Pa., has been appointed superintendent of the Shamokin division of the Reading, succeeding A. C. Tosh. **E. F. Keene,** assistant superintendent of the Philadelphia division of the Reading, has been appointed superintendent of the Lehigh and Susquehanna division of the Central of New Jersey, succeeding Mr. Dickerson. **C. J. O'Neil,** superintendent of the Reading Transportation Company, has been appointed assistant superintendent of the Philadelphia division of the Reading, succeeding Mr. Keene. **P. W. Moyer,** assistant superintendent of the Reading Transportation Company, has been appointed superintendent, succeeding Mr. O'Neil. All of the above appointments became effective April 26.

TRAFFIC

Burt L. Gartside, general agent in the passenger department of the Chicago, Burlington & Quincy at Kansas City, Mo., has been appointed general agent at Detroit, Mich, to succeed **F. L. Gannaway,** who, at his own request, has been retired under the pension rules of this company after 50 years of service.

Paul P. Hastings, assistant freight traffic manager of the Atchison, Topeka & Santa Fe with headquarters at San Francisco, Cal., has been promoted to freight traffic manager with headquarters at Chicago, to succeed **C. C. Dana,** whose death on March 15 was reported in the *Railway Age* of March 20. A biographical sketch and photograph of Mr. Hastings were presented in the *Railway Age* of August 15, 1936, on the occasion of his appointment as assistant freight traffic manager at San Francisco.

OBITUARY

F. H. Anderson, trainmaster on the Illinois Central with headquarters at Memphis, Tenn., died on April 19.

William F. McPhail, who retired in December, 1925, as general baggage agent of the Pennsylvania, died at his home in West Philadelphia on April 24, at the age of 81 years.

Col. H. M. Boykin, who retired last September as assistant general freight agent of the Seaboard Air Line, with headquarters at Richmond, Va., died on April 25 at his home in that city. He was 76 years old.

Harry B. Chamberlain, formerly vice-president of the Erie, died on April 26 at Nashville, Tenn. Mr. Chamberlain was 78 years old. He was born at Buffalo, N. Y., and first entered Erie service with its predecessor, the New York, Lake Erie & Western, in 1885. After advancing through various positions in the traffic department Mr. Chamberlain became assistant general freight traffic manager, lines east of Buffalo, N. Y., and Salamanca, in May, 1898. Two years later he became eastern freight traffic manager of the Erie and freight traffic manager of the New York, Susquehanna & Western (part of the Erie), being advanced to freight traffic manager of both lines in 1902. In the following year Mr. Chamberlain became third vice-president and general traffic manager of these roads at New York, and in 1905 he was further advanced to vice-president of the Erie in charge of traffic. He left this company in 1910 to become vice-president of the Tennessee Central, being appointed receiver of this line in 1913. He held this position until 1917.

UNION PACIFIC RAILROAD COMPANY

Fortieth Annual Report—Year Ended December 31, 1936

TO THE STOCKHOLDERS OF UNION PACIFIC RAILROAD COMPANY:

The Board of Directors submits the following report for the year ended December 31, 1936, of the operations and affairs of the Union Pacific Railroad Company. Effective January 1, 1936, the properties of Oregon Short Line Railroad Company, Oregon-Washington Railroad & Navigation Company, Los Angeles & Salt Lake Railroad Company and The St. Joseph and Grand Island Railway Company were leased to and are being operated by the Union Pacific Railroad Company and, therefore, the figures for transportation operations shown herein for 1936 are those of the Union Pacific Railroad Company, while those for 1935 are consolidated figures for the companies named, *the figures for 1935 as shown in the report for that year having been restated for purpose of comparison to include those of the St. Joseph and Grand Island Railway Company not heretofore included in the consolidated figures for the Union Pacfic System.* The lessor companies have certain income and charges, and the figures in the Income Account, other than those relating to transportation operations, and in the Profit and Loss Account and General Balance Sheet and tabulations and tables relating thereto are stated on a consolidated basis, *excluding offsetting accounts between the companies, except as otherwise noted.*

Income

The operated mileage at close of year and income for the year 1036, compared with 1935, were as follows:

	1936	1935	INCREASE	DECREASE
Operated Mileage at Close of Year				
Miles of Road	9,918.01	9,825.38	92.63	
Miles of additional main track	1,541.95	1,542.14	.....	.19
Miles of yard tracks and sidings	4,262.52	4,243.62	18.90	
Total Mileage Operated	15,722.48	15,611.14	111.34	
Transportation Operations				
Operating revenues	$155,213,582.83	$132,304,043.96	$22,909,538.87	
Operating expenses	108,728,114.40	95,208,406.56	13,519,707.84	
Revenues over expenses	$46,485,468.43	$37,095,637.40	$9,389,831.03	
Taxes	13,057,038.88	10,055,872.94	3,001,165.94	
Railway Operating Income	$33,428,429.55	$27,039,764.46	$6,388,665.09	
Rents from use of joint tracks, yards, and terminal facilities	1,614,739.31	1,680,312.47	.....	$65,573.16
	$35,043,168.86	$28,720,076.93	$6,323,091.93	
Hire of equipment—debit balance	$7,721,865.65	$7,239,375.42	$482,490.23	
Rents for use of joint tracks, yards, and terminal facilities	2,250,676.63	2,184,866.53	65,810.10	
	$9,972,542.28	$9,424,241.95	$548,300.33	
Net Income from Transportation Operations	**$25,070,626.58**	**$19,295,834.98**	**$5,774,791.60**	
Income from Investments and Sources other than Transportation Operations				
Dividends on stocks owned	$7,149,689.54	$9,235,600.47	.....	$2,085,910.93
Interest on bonds, notes, and equipment trust certificates owned	4,129,302.35	4,600,782.63	.....	471,480.28
Interest on loans and open accounts—balance	122,454.01	† *14,164.35*	$136,618.36	
Rents from lease of road	120,321.18	120,139.82	181.36	
Miscellaneous rents	335,133.35	337,446.14	.....	2,312.79
Miscellaneous income	613,750.93	471,985.64	141,765.29	
Total	$12,470,651.36	$14,751,790.35	.....	$2,281,138.99
Total Income	$37,541,277.94	$34,047,625.33	$3,493,652.61	
Fixed and Other Charges				
Interest on funded debt	$14,588,642.87	$14,598,173.37	.....	$9,530.50
Miscellaneous rents	12,947.67	14,507.41	.....	1,559.74
Miscellaneous charges	731,152.60	806,691.71	.....	75,539.11
Total	$15,332,743.14	$15,419,372.49	.....	$86,629.35
Net Income from All Sources	**$22,208,534.80**	**$18,628,252.84**	**$3,580,281.96**	
DISPOSITION OF NET INCOME				
Dividends on Stock of Union Pacific Railroad Co.:				
Preferred stock:				
2 per cent paid April 1, 1936	$1,990,862.00			
2 per cent paid October 1, 1936	1,990,862.00	$3,981,724.00	$3,981,724.00	
Common stock:				
1½ per cent paid April 1, 1936	$3,334,365.00			
1½ per cent paid July 1, 1936	3,334,365.00			
1½ per cent paid October 1, 1936	3,334,365.00			
1½ per cent payable January 2, 1937	3,334,365.00	13,337,460.00	13,337,460.00	
Total Dividends		$17,319,184.00	$17,319,184.00	
Sinking Fund Requirements		.....	10,000.00	..... $10,000.00
Total Appropriations of Net Income		$17,319,184.00	$17,329,184.00	..... $10,000.00
Surplus, Transferred to Profit and Loss		**$4,889,350.80**	**$1,299,068.84**	**$3,590,281.96**

† Debit.

Expenditures Chargeable to Investment in Road and Equipment

Extensions and Branches	$51,802.57	Credits to Investment in Road and Equipment for retirements:	
Additions and Betterments (excluding equipment)	2,413,875.31	Cost of property retired and not replaced	$5,011,608.33
Equipment	10,652,336.62	Cost of equipment retired	4,763,014.82
		Total Credits	$9,774,623.15
Total Expenditures	$13,118,014.50	Net increase in "Investment in Road and Equipment"	$3,343,391.35

[Advertisement]

Operating Results for Year 1936 Compared with Year 1935

	1936	1935	Increase	Decrease	Per Cent
Average miles of road operated	9,859.80	9,836.44	23.36	.....	.2
Operating Revenues					
1. Freight	$126,916,645.53	$109,947,961.32	$16,968,684.21	.....	15.4
2. Passenger	15,062,417.05	11,200,331.35	3,862,085.70	.....	34.5
3. Mail	4,796,753.91	4,472,556.11	324,197.80	.....	7.2
4. Express	2,116,577.87	1,815,195.43	301,382.44	.....	16.6
5. Other passenger-train	2,593,867.54	1,895,802.10	698,065.44	.....	36.8
6. Switching	1,470,484.80	1,015,230.47	455,254.33	.....	44.8
7. Water line	7,487.46	16,637.66	.....	$9,150.20	55.0
8. Other	2,249,348.67	1,940,329.52	309,019.15	.....	15.9
9. Total operating revenues	$155,213,582.83	$132,304,043.96	$22,909,538.87	.....	17.3
Operating Expenses					
10. Maintenance of way and structures	$16,927,970.72	$15,971,237.04	$956,733.68	.....	6.0
11. Maintenance of equipment	29,090,749.04	24,200,533.69	4,890,215.35	.....	20.2
12. Total maintenance	$46,018,719.76	$40,171,770.73	$5,846,949.03	.....	14.6
13. Traffic	3,835,288.30	3,354,669.92	480,618.38	.....	14.3
14. Transportation—rail line	49,194,353.55	44,140,841.76	5,053,511.79	.....	11.4
15. Transportation—water line	6,088.22	10,250.09	.....	$4,161.87	40.6
16. Miscellaneous operations	3,166,226.68	2,331,206.64	835,020.04	.....	35.8
17. General	6,507,726.27	5,208,052.93	1,299,673.34	.....	25.0
18. Transportation for investment—*Credit*	288.38	8,385.51	.....	8,097.13	96.6
19. Total operating expenses	$108,728,114.40	$95,208,406.56	$13,519,707.84	.....	14.2
20. Revenues over expenses	$46,485,468.43	$37,095,637.40	$9,389,831.03	.....	25.3
Taxes					
21. State and county	$8,903,216.93	$9,152,998.27	.....	$249,781.34	2.7
22. Unemployment insurance—Federal and State	624,742.62	.....	$624,742.62	.....	—

(*This table continued at top of opposite page*)

General Balance Sheet—Assets

	December 31, 1936	December 31, 1935	Increase	Decrease
Investments:				
Road and Equipment	$939,086,294.65	$935,742,903.30	$3,343,391.35	
Less:				
Receipts from improvement and equipment fund	$23,823,091.13	$23,823,091.13		
Appropriations from income and surplus prior to July 1, 1907, credited to this account	13,310,236.52	13,310,236.52		
Total	$37,133,327.65	$37,133,327.65		
701. **Investment in road and equipment**	**$901,952,967.00**	**$898,609,575.65**	**$3,343,391.35**	
704. Deposits in lieu of mortgaged property sold	$91,085.28	$185,740.18	.....	$94,654.90
705. Miscellaneous physical property	3,752,460.15	2,561,298.56	$1,191,161.59	
Total	$3,843,545.43	$2,747,038.74	$1,096,506.69	
706. **Investments in affiliated companies:**				
Stocks	$20,218,054.94	$19,569,198.94	$648,856.00	
Bonds, notes, and equipment trust certificates	12,982,236.98	14,558,732.55	.....	$1,576,495.57
Advances	17,630,370.41	17,598,740.12	31,630.29	
Total	$50,830,662.33	$51,726,671.61	.....	$896,009.28
707. **Investments in other companies:**				
Stocks (Table 8)	$79,157,148.70	$79,157,248.70	.....	$100.00
Bonds, notes, and equipment trust certificates	$68,180,314.18	73,433,747.72	.....	5,253,433.54
Total	$147,337,462.88	$152,590,996.42	.....	$5,253,533.54
United States Government Bonds and Notes	$23,847,082.76	$23,847,082.76		
703. Sinking funds	$278,948.29	$268,948.29	$10,000.00	
Total Investments	**$1,128,090,668.69**	**$1,129,790,313.47**	.....	**$1,699,644.78**
Current Assets:				
708. Cash	$25,995,814.93	$25,057,214.06	$938,600.87	
710. Time drafts and deposits	400,000.00	400,000.00		
711. Special deposits	55,513.66	59,661.86	.....	$4,148.20
712. Loans and bills receivable	22,856.64	33,676.74	.....	10,820.10
713. Traffic and car service balances receivable	4,959,508.39	3,875,706.88	1,083,801.51	
714. Net balance receivable from agents and conductors	1,285,580.73	1,031,029.89	254,550.84	
715. Miscellaneous accounts receivable	4,334,928.83	4,111,229.58	223,699.25	
716. Material and supplies	21,638,889.06	16,798,809.08	4,840,079.98	
717. Interest and dividends receivable	1,038,554.43	1,195,682.05	.....	157,127.62
718. Rents receivable	126,997.21	103,997.00	23,000.21	
719. Other current assets:				
Baltimore and Ohio Railroad Co. capital stock applicable to payment of extra dividend of 1914	114,655.70	115,263.70	.....	608.00
Miscellaneous items	380.65	10,908.40	.....	10,527.75
Total Current Assets	$59,973,680.23	$52,793,179.24	$7,180,500.99	
Deferred Assets:				
720. Working fund advances	$238,819.71	$70,566.94	$168,252.77	
722. Other deferred assets	4,050,653.25	3,203,962.82	846,690.43	
Total Deferred Assets	$4,289,472.96	$3,274,529.76	$1,014,943.20	
Unadjusted Debits:				
723. Rents and insurance premiums paid in advance	$32,200.96	$1,695.09	$30,505.87	
725. Discount on funded debt	763,298.60	794,992.64	.....	$31,694.04
727. Other unadjusted debits	1,463,089.15	515,850.84	947,238.31	
Total Unadjusted Debits	$2,258,588.71	$1,312,538.57	$946,050.14	
Grand Total	**$1,194,612,410.59**	**$1,187,170,561.04**	**$7,441,849.55**	

[Advertisement]

Operating Results for Year 1936 Compared with Year 1935—Continued

	TAXES—(*Continued*)	1936	1935	INCREASE	DECREASE	PER CENT
23.	Federal income	$1,347,610.62	$578,436.31	$769,174.09	.....	133.0
24.	Federal capital stock	358,341.48	294,045.02	64,296.46	.....	21.9
25.	Federal excise	1,801,373.69	.....	1,801,373.69	.....	—
26.	All other federal	21,753.76	30,393.34	.....	8,639.58	28.4
27.	Total taxes	$13,057,038.88	$10,055,872.94	$3,001,165.94	.....	29.8
28.	Railway operating income	$33,428,429.55	$27,039,764.46	$6,388,665.09	.....	23.6
29.	Equipment rents (debit)	7,721,865.65	7,239,375.42	482,490.23	.....	6.7
30.	Joint facility rents (debit)	635,937.32	504,554.06	131,383.26	.....	26.0
31.	Net railway operating income	$25,070,626.58	$19,295,834.98	$5,774,791.60	.....	29.9
	Per cent—Operating expenses of operating revenues	70.05	71.96	.....	1.91	2.7
	FREIGHT TRAFFIC (*Commercial Freight only*)					
	Tons of revenue freight carried	26,720,428	22,734,897	3,985,531	.....	17.5
	Ton-miles, revenue freight	12,522,299,230	10,603,455,396	1,918,843,834	.....	18.1
	Average distance hauled per ton (*miles*)	468.64	466.40	2.24	.....	.5
	Average revenue per ton-mile (*cents*)	1.014	1.037	.....	.023	2.2
	Average revenue per freight-train mile	$5.61	$5.30	$.31	.....	5.8
	PASSENGER TRAFFIC (*Excludes Motor Train, other than Streamlined Train*)					
	Revenue passengers carried	1,880,651	1,528,782	351,869	.....	23.0
	Revenue passengers carried one mile	907,324,454	648,882,466	258,441,988	.....	39.8
	Average distance hauled per passenger (*miles*)	482.45	424.44	58.01	.....	13.7
	Average passengers per passenger-train mile	72.80	58.87	13.93	.....	23.7
	Average revenue per passenger-mile (*cents*)	1.641	1.701	.....	.060	3.5
	Average revenue per passenger-train mile, passengers only	$1.19	$1.00	$.19	.....	19.0
	Average total revenue per passenger-train mile	$1.83	$1.69	$.14	.....	8.3

General Balance Sheet—Liabilities

		December 31, 1936	December 31, 1935	INCREASE	DECREASE
751.	**Capital Stock**				
	Common stock	$222,302,500.00	$222,305,000.00	.....	$2,500.00
	Preferred stock	99,604,980.79	99,604,980.79		
	Total Capital Stock	$321,907,480.79	$321,909,980.79	.....	$2,500.00
755.	**Funded Debt**	346,091,800.00	347,495,675.00	.....	1,403,875.00
	Total	$667,999,280.79	$669,405,655.79	.....	$1,406,375.00
754.	**Grants in Aid of Construction**	$4,402,054.89	$4,172,650.06	$229,404.83	
757.	**Nonnegotiable Debt to Affiliated Companies**	$4,879,765.26	$8,323,585.70	.....	$3,443,820.44
	Current Liabilities:				
759.	TRAFFIC AND CAR SERVICE BALANCES PAYABLE	$1,846,130.28	$1,619,375.41	$226,754.87	
760.	AUDITED ACCOUNTS AND WAGES PAYABLE	10,161,345.67	7,676,333.61	2,485,012.06	
761.	MISCELLANEOUS ACCOUNTS PAYABLE	1,967,165.59	160,410.49	1,806,755.10	
762.	INTEREST MATURED UNPAID:				
	Coupons matured, but not presented	98,715.61	105,399.11	.....	$6,683.50
	Coupons and interest on registered bonds, due first proximo	3,888,912.40	4,492,667.50	.....	603,755.10
763.	DIVIDENDS MATURED UNPAID:				
	Dividends due but uncalled for	115,588.79	140,578.82	.....	24,990.03
	Extra dividend on common stock declared January 8, 1914, payable to stockholders of record March 2, 1914, unpaid	123,631.76	124,242.78	.....	611.02
	Dividend on common stock payable second proximo	3,334,365.00	3,334,365.00		
764.	FUNDED DEBT MATURED UNPAID	2,254,725.00	8,175.00	2,246,550.00	
766.	UNMATURED INTEREST ACCRUED	1,654,601.89	1,407,537.41	247,064.48	
767.	UNMATURED RENTS ACCRUED	366,781.62	288,843.76	77,937.86	
768.	OTHER CURRENT LIABILITIES	196,216.83	158,031.36	38,185.47	
	Total Current Liabilities	$26,008,180.44	$19,515,960.25	$6,492,220.19	
	Deferred Liabilities:				
770.	OTHER DEFERRED LIABILITIES	$7,834,605.26	$7,783,767.65	$50,837.61	
771.	TAX LIABILITY	8,651,247.57	5,497,047.32	3,154,200.25	
	Total Deferred Liabilities	$16,485,852.83	$13,280,814.97	$3,205,037.86	
	Unadjusted Credits:				
773.	INSURANCE RESERVES:				
	Reserve for fire insurance	$7,457,704.23	$6,937,218.40	$520,485.83	
776.	RESERVE FOR DEPRECIATION	106,793,689.98	103,422,969.92	3,370,720.06	
778.	OTHER UNADJUSTED CREDITS:				
	Contingent interest	1,660,967.76	1,183,421.54	477,546.22	
	Miscellaneous items	820,859.96	1,116,481.20	.....	$295,621.24
	Total Unadjusted Credits	$116,733,221.93	$112,660,091.06	$4,073,130.87	
	Total Liabilities	**$836,508,356.14**	**$827,358,757.83**	**$9,149,598.31**	
	Surplus:				
	APPROPRIATED FOR ADDITIONS AND BETTERMENTS	$30,652,543.59	$30,611,667.85	$40,875.74	
	RESERVED FOR DEPRECIATION OF SECURITIES	34,972,570.88	34,972,570.88		
	FUNDED DEBT RETIRED THROUGH INCOME AND SURPLUS	536,828.66	536,828.66		
	SINKING FUND RESERVES	278,948.29	278,948.29		
	Total Appropriated Surplus	$66,440,891.42	$66,400,015.68	$40,875.74	
784.	**Profit and Loss—Credit Balance**	**252,098,363.29**	**253,848,487.79**	.....	**$1,750,124.50**
	Total Surplus	$318,539,254.71	$320,248,503.47	.....	$1,709,248.76
	As this consolidated balance sheet excludes all intercompany items, securities of the Los Angeles & Salt Lake Railroad Company and The St. Joseph and Grand Island Railway Company owned by other System companies are not included. The difference between the par and face value of such securities as carried on the books of the issuing companies (less unextinguished discount on the bonds and discount charged to Profit and Loss but added back in consolidating the accounts) and the amounts at which the securities are carried on the books of the owning companies is set up here to balance.	$39,564,799.74	$39,563,299.74	$1,500.00	
	Grand Total	**$1,194,612,410.59**	**$1,187,170,561.04**	**$7,441,849.55**	

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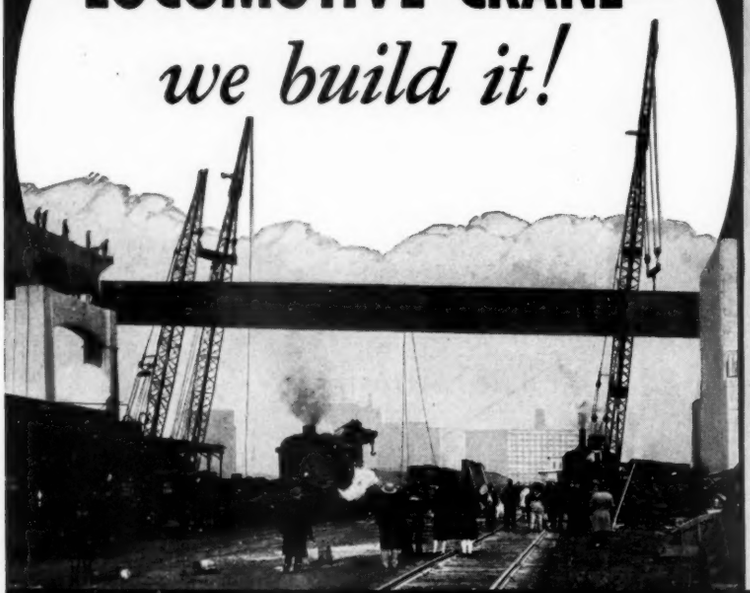

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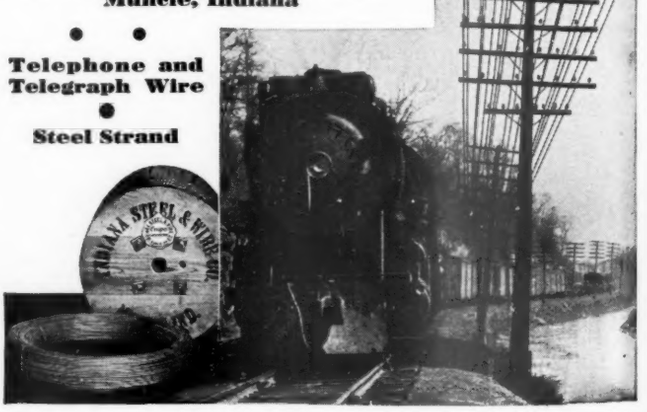
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